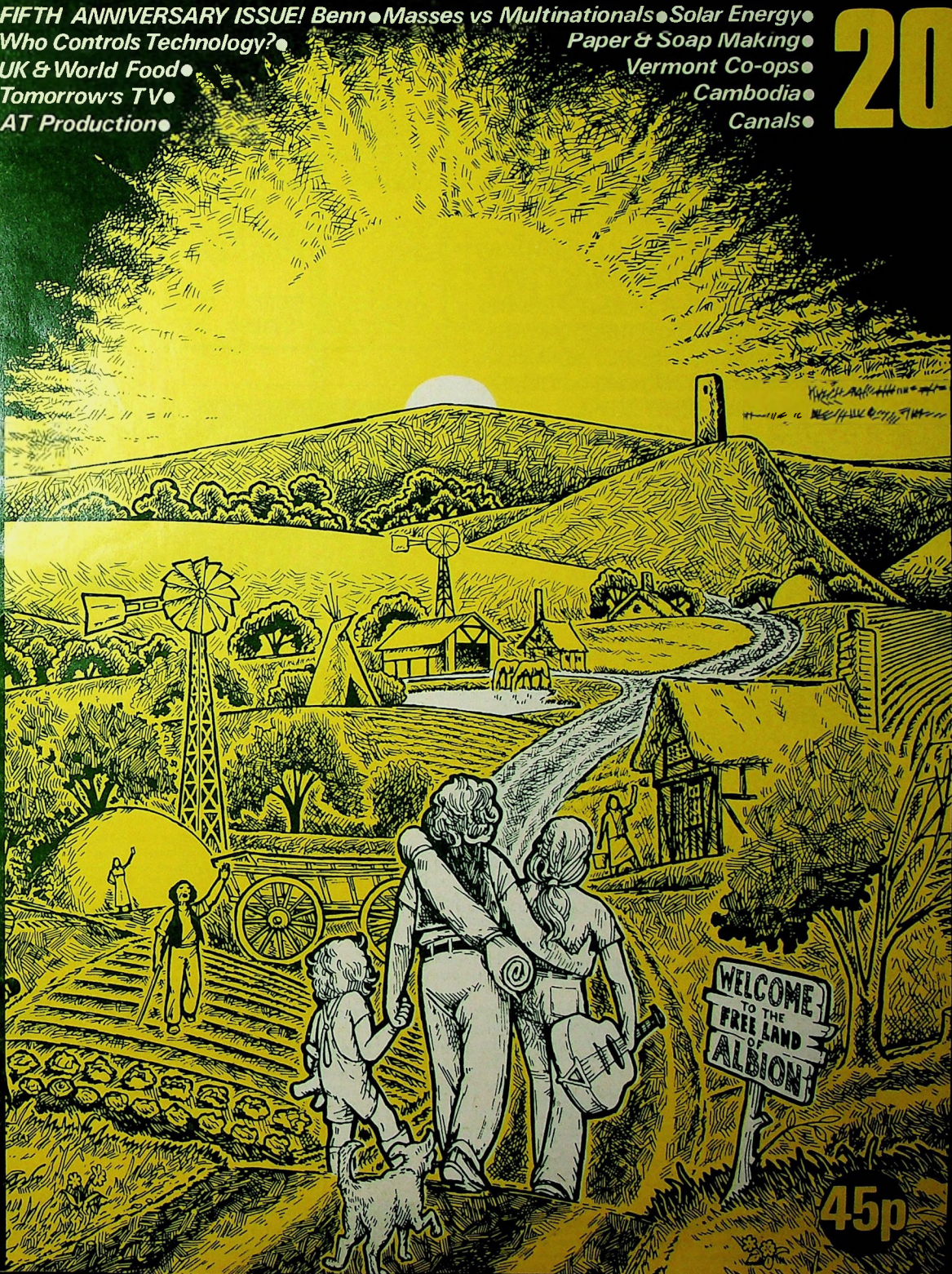


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UNDERCURRENTS  
ISSN 0306 2392

*Undercurrents* is published bi-monthly by Undercurrents Limited, a democratic non-profit-making company without share capital and limited by guarantee.  
Printed in England by Prestagate Ltd.,  
39 Underwood Road, Reading, Berkshire.  
Telephone 0734 583958.

*Undercurrents* has two addresses:

Earth Exchange Building, 213 Archway Road,  
London N6 5BN (registered office),  
and

11 Shadwell, Uley, Dursley, Gloucestershire,  
GL11 5BW, Telephone 045 386-636.

Please send subscriptions, single copy orders  
etc. to Uley and letters and editorial matter to  
the London office.

#### SUBSCRIPTIONS.

Details of the subscription rates and the  
appropriate labour-saving form may be found  
on page 48.

Our airfreight agents are *Expeditors of the  
Printed Word Inc.*, 527 Madison Avenue, New  
York N.Y. 10022. Second class postage paid at  
New York City.

**DISTRIBUTION.** We have two UK distributors:  
The Publication Distribution Co-operative,  
27 Clerkenwell Close, London EC1 0AT, Tel  
01-251 4976-8, supply radical bookshops  
and other alternative stores.

Paperchain Ltd, 43 Silver St, Whitwick, Leics.  
and 5 Monmouth St, London W2, supply  
other outlets and all UK wholesalers. Tel:  
0530 37413 and 01-229 9000.

All enquiries about distributors to Chris  
Hutton-Squire at our London office, please.

He can be contacted by phone on 01-891  
0989 (home) or 01-261 6774 (office).

**COVER.** Thanks to Cliff Harper for the front  
and back covers and the centre spread (pages  
24 & 25) which is available as an A3 size poster  
from for only 25p from Epic Productions,  
76 Peckham Rd, London SE5. Free to prisoners.

**PERSONNEL:** *Undercurrents* has two part-time  
employees, Sally Boyle and Joyce Evans, and a  
large number of unpaid part-timers, of whom  
the following helped to produce this issue:

Barbara Kern, Chris Hutton-Squire, Dave  
Elliott, Dave Kanner, Dave Smith, Duncan  
Campbell, Godfrey Boyle, Martin Ince, Pat  
Coyne, Pete Glass, Peter Cockerton, Peter  
Sommer, Richard Elen, Tony Durham, and,  
most important of all, the Collective-at-large.  
Especially thanks are also due to Nigel and  
Hermione Gowland and all at Earth Exchange.  
Anyone interested in any aspect of the mag-  
azine is invited to attend our weekly meetings at  
Archway Road. These occur on Wednesdays  
and start at about 8pm.

**WRITTEN CONTRIBUTIONS** to the magazine  
are most welcome, preferable but not  
necessarily double-space typed on one side of  
the paper to facilitate the minimal amount of  
editing we like to perform. Scripts should be  
sent to Archway Road.

**ORGANISATION.** *Undercurrents* is not pro-  
duced by a publishing elite: it is open to any-  
one who feels committed to the magazine and  
its aims. Key decisions are made by the  
collective at major meetings held every two  
months, immediately after publication day. At  
these meetings we discuss the latest issue,  
review what we are doing for the next edition,  
and appoint posts for the one after that.  
Principal functions - News Editor, Features  
Editors, Reviews Editor, and so on are  
allocated at these meetings depending on who  
is available. All decisions on important issues of  
editorial policy, production, etc. emerge during  
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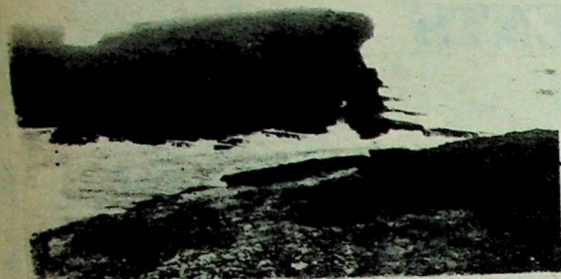
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## First it was oil...!

Plans to mine Uranium in Orkney have not been given the 'North Sea bonanza' treatment which the media accorded to it, perhaps because it would not be seen as such an unmixed blessing.

The South of Scotland Electricity Board are to carry out an investigation, as a result of which they hope to establish whether or not uranium understood to be on the island can be found in sufficient quantity, in such quality and at such depth that it can be mined economically.

SSEB chairman, Frank Tombs, has said, however, that "the early work in Orkney has indicated some deposits of higher grades than are being exploited in commercial operations overseas". Though this does not in itself mean that they are definitely going to go ahead, the signs are ominous, and if a substantial thermal reactor programme were to be adopted it would be very difficult indeed to stop Orkney being ripped up.

The Board have obtained rights from landowners in Orkney to carry out an investigation. This would entail "putting down a small number of bores and sampling surface materials".

This work has not yet begun, but nevertheless local people are already on the alert. Some people on the island are prepared to stay and meet the bulldozers. The local Friends of the Earth have distributed a comprehensive factsheet which outlines the gruesome effects a uranium mine would have on the environment and how it would upset Orkney's employment patterns.

There has been a spate of almost hysterical letters in the local paper, *The Orcadian*, which has itself taken a stand on the issue: "We feel these islands are doing plenty for the national effort by accepting oil and all its possible consequences without having this further hazard, whose effects on human health and on the landscape are still unknown, to be now thrust upon us. We refuse to be expendable..."

The quest for uranium has not exactly proceeded smoothly in other parts of the world, as *Undercurrents* readers will be aware. The British Government contract in Namibia has a notorious and continuing history of deceit, secrecy and immorality. It serves to illustrate the levels to which governments will sink in order to fuel their reactors.

One of the final conclusions of the ambiguous Fox report on uranium mining in Australia was that "The nuclear power industry is unintentionally contributing

to an increased risk of nuclear war. This is the most serious hazard associated with the industry". Unions, in alliance with environmental groups, played a major part in the debate there, even at one point blacking all handling of uranium. One wonders what the reaction of British trade unionists would be to a proposed mine in Orkney.

One other aspect of the proposal deserves attention; which company would be responsible for the operation of the mine? Already, that famous pillar of international morality, Rio Tinto Zinc have been mentioned in connection with Orkney uranium. They are not known for their concern for the environment, their human scale or their honesty.

Should the SSEB and RTZ decide to go ahead, it is clear that they will meet a lot of informed and determined local opposition; the opposition will need all the help it can get against such massive interests.

Factsheet on Orkney's uranium from FoE Orkney, c/o Quoyclerks, Orphir. Enclose s.a.e. and all you can afford.

## oops!

The cartoons that appeared on pp22 23 and 38 of UC19 were from an excellent pamphlet published by the Haslemere Group called 'Who Needs the Drug Companies'. We had planned to print some short extracts as well, to whet your appetite, but ran out of space. Much more reprehensible was the failure to acknowledge the source of Merrily Harpur's cartoons, for which we humbly apologise.

'Who Needs the Drug Companies' is available from Third World Publications, 138 Stratford Road, Birmingham B11 1AH, price 50p, and provides all the ammunition you need to snipe at the Multi-national drug companies together with some workable suggestions for change.

## Travel hints

London's Fare Fight group, dedicated to just-about legal action against the price of travel on the Underground, has at last been brought to court, very inconclusively, by London Transport.

Fare Fight came into existence in the context of LT's 26% Fare increase last July. The technique adopted by Fare Fight was deferred payment, whereby the Fighters give ticket collectors a ticket for a fare of less than the LT going rate, accompanied by a slip giving the miscreant's name and address, along with the details of the journey travelled and the price paid. This is legal.

What happens next? Well, all LT have to do is to write to the Fighters and ask for the money. This they have been very slow to do, and the Fighters have responded with a vast weight of paperwork asking for all kinds of details of the payment required, its legal basis, and so forth.

It has taken until now for two of the Fighters, Alan Low and Piers Corbyn, to be taken to court. Even then they claim that sums asked for have always been paid, eventually, so that the charge of travelling with intent to avoid payment is unsound.

It took Low and Corbyn until two weeks before the trial to get legal aid for a solicitor despite which the LT side refused to agree to an adjournment. They, indeed, showed up in court with a solicitor who had had a two month look at the evidence. But not before they had phoned Fare Fight, thus acknowledging their existence, offering an adjournment if Fare Fight would call off the deferred slips campaign. LT are apparently under an impression that Fare Fight is a centrally managed campaign rather than a mob of anarchists, and is susceptible to the issuing of orders. They were told that the proposed retreat was impossible and that Fare Fight didn't want it anyway. An adjournment was, in fact, granted with LT's agreement at the two minute hearing on January 19. More in May, but messages of support, spare funds, and requests for deferred payment slips should be sent to Fare Fight at 60a Turners Road, London E3; phone messages at 01-790 9965 in evenings.

So far the Fare Fight struggle hasn't been extended widely to the BR commuter services, but a BR document, despatched anonymously, sets out the action to be taken had it done so at the time of the New Year fare rises. The forms were to be accepted and sent to BR Board HQ, in Marylebone Road, where they would be processed for collection of due fares; and details of anyone using more than five would go to the British Transport Police. They, of course, are not in a position to take any action at all, even if BR Fare Fighting does break out.

**THIRD PARTY INSURANCE**  
In Berlin, the 'Schwarzfahrer' (literally 'black travellers'), who feel it is their fundamental right to ride the U-Bahn for nothing, have developed yet another way to continue their campaign for free public transport.

After a record was released in 1969 calling for 'black riding' as a protest against rises in fares, lots of people started using the underground without buying

tickets. The system is highly mechanised and there is no control on people entering or leaving the station. Because of the success of that campaign (ticket sales dropped noticeably), Berlin's Underground company employed many new plain-clothes inspectors who raided the cars in troupes of four, handing out the fixed £5 fines.

Some unlucky people got caught a few times, which led to the foundation of 'black rider insurance', a system whereby eight or ten people put five marks (£1.20) in a pot to pay the fine of anyone who gets caught. Any surplus goes to alternative projects or the third world, according to the pool's preference.

Meanwhile, the winter edition of the Paris Magazine *Le Sauvage* reports the growth of a local equivalent of Fare Fight.

The first outbreak of fare avoidance was in Nantes in 1974 where the youth end of the Labour-type *Partie Socialiste* organised a broad-based protest in which a magistrate was prosecuted for non-payment.

But it was last year's steep increases in fares on the Paris Metro which caused the formation of GRAP, Groupe de resistance

## JE REFUSE DE PAYER LES TRANSPORTS!



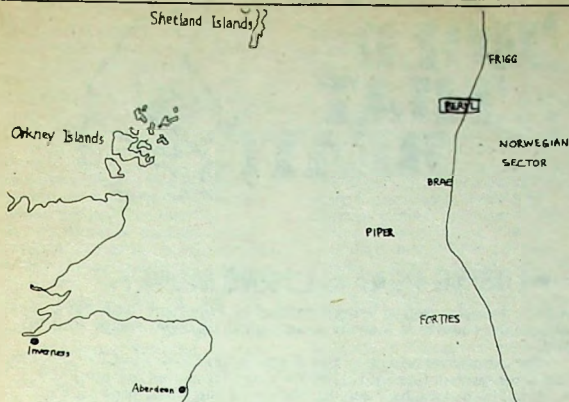
POUR DES TRANSPORTS GRATUITS!

active aux transports publics payants, which is in favour of free public transport. This seems a little odd to the visiting Londoner, as it costs only about 20p for any journey on the Metro, with massive season reductions, but still.

Before GRAP got started, RATP, the Paris public transport authority, reported that it lost £3m in 1973-4 to fare evaders. Then automatic barriers were installed, to cut down this figure, but they are easily jumped. Therefore it's not too hard to get on the Metro, where ticket checks are rare; and as the fare is uniform, there are no checks at the other end of the journey.

It's impossible to estimate the total of fare evasion by GRAP supporters, but it is certainly much higher now than the RATP figures of over £1m a year for 1973 and 1974. And apart from fare evasion, GRAP have had noted successes in overwhelming RATP with paperwork, like Fare Fight, and in organising petitions and letters of protest.





Our research into the mysterious delays affecting the Beryl oilfield has produced some disturbing facts, or lack of them.

The operators and half-owners, Mobil Oil North Sea, claim that it is the fifth biggest oilfield in the UK sector of the North Sea, with 50 million tonnes of oil proven and reasonably assured.

Unlike most of its fellows in the great North Sea oil race, Beryl is rarely in the news; the last item about the field for some months was in the Financial Times on November 25, 1976, and referred summarily to 'development delays'. Oil is at present being extracted and pumped aboard tankers for the journey to the refinery, and the likely reason why Mobil are in no hurry to install a permanent and very expensive pipeline, we can reveal, is that they have, in fact, no idea how much oil is in the ground at Beryl or how easy it will be to extract. Otherwise a pipeline would be a good investment for a field of this apparent size.

The oil-bearing strata are at depths of between 18,000 and 24,000 feet in the Viking graben, a complex geological structure occupying much of the area around the British-Norwegian median line. The oil is partly in a shale of Cretaceous age, from which it will probably prove impossible to extract, but mostly in a variety of Jurassic rocks. But of the oil-bearing strata, probably totalling several hundred feet, only some ten feet have so far been seen as cores by Mobil geologists. While coring is expensive, even by oil drilling standards, it is the usual practice to core all of an oil-bearing zone.

In particular, the bottom of the oil-bearing zone, the oil-water contact hasn't been seen. This means that the precise thickness of oil-bearing rock isn't known, and the results of extracting the oil are unpredictable.

Likewise, most of the oil-bearing shale has not been seen, and the ratio of shale to other rock types is unknown. This means that it is impossible to tell what rate of oil extraction can be sustained or what final offtake of oil can be expected, even by the somewhat generous standards of accuracy usual to the industry.

Worst of all, the geology of the area, which is interpreted by relating seismic sections of the area to logs recorded in the oilwells themselves, is proving very difficult to describe.

The area shows a mix of marine and terrestrial rock types, and even the interfingering of the two is proving impossible, let alone more detailed analysis. One Mobil man applied the term 'desperate' to the massive team of 29 geophysicists, geologists and petroleum engineers, who are working on the project, and said that no decisions are being taken under their present conditions of bafflement, enlivened only by the occasional hunch. It seems as if such hunches will remain the staple for Beryl's would-be interpreters; we'll let you know as soon as they find out more, and especially if they decide to amend the figures for reserves and output which they've already given to the Department of Energy and which are now part of Government planning.

#### DISTRICT HEATING COULD SAVE JOBS

Given the current overcapacity in the electricity generation industry, the work provided by the Drax B power station project will only provide temporary relief and there will still be little for many of the employees of Parsons, GEC and the other boiler and generator supply firms to do, says a recent report from the Energy Research Group (ERG) at the Open University.

"Given the evidence of market saturation and the possibility of a continued economic recession it will probably be many years before there is an effective demand for new power stations".

The same problem faces the nuclear industry. A paper prepared for shop stewards in the energy supply industry by a group of people from ERG carries the analysts further:

"If world markets do not grow due to a continued world recession or the action of Anti-Nuclear lobbies, competition will be all the fiercer, possibly (if not probably) resulting in the contraction of the British Nuclear Industry and with it further redundancies".

The paper goes on:

"Because of these uncertainties and the virtual inevitability of a number of redundancies now, it would be appropriate to entertain alternative options which would, at one and the same time, save jobs

which are currently threatened and cushion the inherently uncontrollable effects originating in the world economy".

ERG suggest that Combined Heating and Power schemes (CHP) are the answer - small conventional fossil fuel powered stations producing electricity but also using the heat that is usually rejected so wastefully (representing 70% or more of the input energy) in normal power station operation, to provide steam for 'district heating' networks connected to local residential or commercial buildings.

"Immediate implementation would alleviate the short term problems and, given satisfactory performance, would provide a flow of steady orders for the industry. Jobs can be expected to be saved in all branches of the industry from design through to on-site construction work".

The sort of scheme ERG envisages would require the recommissioning of many of the CEBG's smaller (50-250 MW) (c) city based generators, refitted with new coal fired boilers, turbines and switchgear, and used to provide heating for large heat loads such as hospitals, high rise flats and so on.

"The ordering of CHP plants would keep site crews busy, would give turbine designers work and would subsequently give turbine makers and boiler makers substantial orders. In addition CHP schemes of 50-250 MW size have a substantially larger export market than large 660 MW sets, especially in developing nations".

Investment in CHP, coupled with a programme of improvement and maintenance of existing large stations would also (say the ERG group) make sense in terms of long term strategy.

"Since the industry does have a large overcapacity it should exploit this now so as to have a very high performance system in 5-10 years when the margin may be substantially reduced".

## Lucas &c

Lucas Industries recently announced that they were developing a four-wheel electric car for disabled people as well as an electric-powered wheel chair.

A company spokesman commented:

"There is no connection between the research we are doing on wheel chairs and the unions' demands for more socially useful products. We maintain that all Lucas products are socially useful".

Meanwhile at the Burnley plant of Lucas Aerospace detailed discussions are underway between local managers and the shop stewards over the proposed development of diesel-powered heat pump systems for local authority housing projects.

Aerospace workers at the Hawker Siddeley plant in Brough, near Hull who are facing a redundancy threat, are adopting a Lucas-style 'conversion' campaign approach. They held a meeting to discuss strategy and alternative technological options on Jan 25th.

#### WHAT ABOUT THE WORKERS?

BOEING has announced a plan to protect its industrial machinery and begin building jet bombers again within twelve weeks of a thermonuclear bomb strike. Production machinery will be supported on polyurethane foam and covered with plastic foam, metal chips, balsa wood and sandbags to cushion it from the shock.

However the company has not yet found a way to protect the workers who would be needed to implement the protective measures or to resume production after a nuclear war, a Boeing spokesman conceded.

#### UNION DUES

TASS (the Technical, Administrative & Supervisory Section of the AUEW, not the Soviet News Agency) continues to be in the vanguard of social concern, as a look at some of the motions submitted to the Representative Council shows.

Motion 67, from Wembley South Branch, calls for the skills of working people to be used in the manufacture of socially useful products - not necessarily for profit - and urges members to co-operate with other staff and the shop floor in producing an alternative product range.

London City branch wants the government to prepare a comprehensive plan for the redeployment of resources tied up in military contracts. Comparable demands were put forward by Sheffield and Antrim branches, while Spenny-moor branch specifically condemned nuclear weapons.

Cumberland & District branch, believing that workers' co-operatives are the only way to industrial democracy, urges the government to encourage their setting up throughout industry and commerce. At the same time, two other branches, in Coventry, warn against compromise and collaboration with 'workers participation' schemes in industries not controlled by the workers - steering between Scylla and Charybdis never was easy.

Liverpool North branch wants the government to promote research into wave, wind and solar energy before a commitment to nuclear fission and Fast Breeder Reactors is made.

The Representative Council meeting is from 18-22 April, so come on, all you white-collar engineers - get down to your branch and get your representative to support these motions. If you're not lucky enough to be a TASS member, why not get your own union branch to start doing something on similar lines?

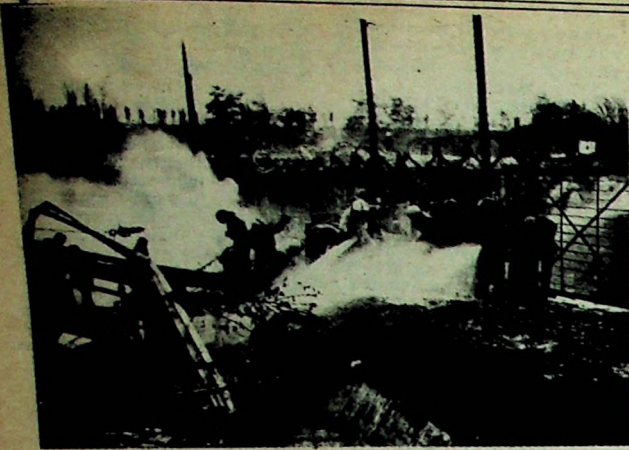
#### YESTERDAY IN PARLIAMENT

A recent amendment to a motion in the House of Commons on Jan 12th urged the government to consider, together with cuts in defense expenditure -

"... redeployment of workers and resources from arms production to socially useful purposes, along the lines of the suggestions made by the Lucas Aerospace Shop Stewards Combine Committee and the Vickers Shop Steward's Combine Committee".

After a lengthy debate, the vote was 77 for, 214 against.





## Polizei smash nuclear demo

In West Germany the determined resistance of political, environmental and religious groups against the hectic nuclear power development programme of the government and the nuclear industry, seems to have some success. The government is now advocating that no new nuclear power stations should be built until the waste disposal problems have been solved. This comes after the massive confrontation in November 1976 at Brokdorf on the river Elbe where 30-50,000 people came together to protest against a proposed new nuclear power station and waste reprocessing plant. Several thousand police from all over West Germany tried to disperse the demonstrators in a well prepared operation by making liberal use of the latest anti-personnel weapons and techniques. Police water cannons were spraying water with special chemical additives, helicopters were used to discharge tear gas on groups of demonstrators, individual policemen were equipped with shields, helmets, gasmasks and 'chemical clubs'. In what was planned as a peaceful demonstration well over 500 people were injured by the police. However, the authorities have clearly not succeeded in intimidating the anti-nuclear power movement. Messages of sympathy and support were received from many groups and individuals not previously committed to the struggle against nuclear power.

## 'HOLD THAT HEAT!'



### \* LOSING HEAT IS LOSING MONEY

A great deal of energy is being expended by Friends of the Earth groups all over the country in actually *doing* something about energy conservation.

The experience gained by FoE Durham from their pilot Job Creation Insulation project (see UC15), which has so far carried out insulation work in 300 homes, has been distributed far and wide, inspiring the creation of some 45 similar schemes involving 140 workers and 1400 homes.

A lot of diplomatic skill must be called for in co-ordinating the efforts of the various charitable bodies, local authorities, unions and tradesmen whose help is necessary. One example is the busy Cambridge FoE, whose logo (reproduced above) appears on Eastern Counties buses, waiting rooms, surgeries and laundrettes, advertising the help that is available.

As the 'Save It' campaign runs out of steam (down from £5 million to £1.2 million) the energy and enthusiasm of such groups could more than replace it.

'Wrap up Warmer' - a guide to cheap insulation and grants available from FoE, Durham, Vane Tempest Hall, Durham DH11 1QG, (5p + SAE).

### A CAT HAS 18 HALF-LIVES

The Department of Energy is most concerned at reports of the finding of a dead cat in the Transfynnd drainage. Conflicting reports as to whether or not it was dangerously radioactive have already emerged.

The position is complicated by the habits of the feline population, with which readers may be familiar. These render it impossible to know if the radioactive danger has now become general among cats.

The Department has therefore asked us to notify readers that any dead cats which might be affected should be sent to them at Millbank House South, London SW1. To avoid danger to messengers and other non-technical staff, they should be addressed to Dr Walter Marshall, the Chief Scientist, and marked 'Private and Personal'.

This notice applies from December 1 1976 for three half-lives of Plutonium. A further notice will be issued at the end of this period, and will be printed in *Undercurrents*.

## Socialists awake!

(The thirteenth post-war congress of the Socialist International was held in Geneva at the end of November 1976).

And on the second day Olaf Palme tapped his little gavel and called upon the 400 odd people assembled in the mammoth hall to stand in silent memory of dead socialists. Usually, at this point in the proceedings, the 'Internationale' is sung. Its stirring words - 'arise, Comrades come rally', 'arise ye criminals of want', 'servile masses arise', 'the last fight let us face' - jogs sleeping delegates out of one dream and puts them into another.

This year, at the 13th Congress, the entertainment was a trifle disconcerting. A slight woman, Bettina Jonic, took the stand. She waited for the last cough to drop, the last flashbulb to stop popping round Harold Wilson and his new Silver Plate of Honour, and then let rip her adaptation of the 'Internationale' - words and music from Brecht, Dylan and Joni Mitchell. She spoke, sang, screamed. It was about what the Socialist International should really sing in 1976:

Once on a dreary afternoon  
while we —  
once on a dreary . . .  
once . . .

ye starvelings arise from your  
slumbers! — arise

once  
once on a dreary afternoon  
while we . . .  
Nothing I do gives me the right  
to eat my fill  
it just so happens I've been  
spared  
give me some men who are  
stout-hearted men  
who will fight for the rights  
they adore  
and while a man is  
don't try and shove a jack-boot  
in his face  
and hunger is human — and  
humans are hungry  
arise — ye criminals of want  
for reason in revolt now  
thunders  
and at last ends the . . .  
humans are hungry for the  
worlds they can't share  
well you can cry me a river  
a man lives  
servile masses arise — arise  
do you ever get tired of the  
preachin'  
the answer my friend is blowing  
in the wind  
then comrades come rally  
and the last fight let . . .  
does the preachin' and the  
politics spin your head around  
make your insides go insane  
the Internationale unites  
cry me a river — cry me a river  
it's too late baby — too late  
people, people who need . . .  
how many roads must a man  
walk down before  
the answer my friend is blowing  
in the wind  
my dreams with the seagulls fly  
out of reach out of cry  
no

a man lives  
then comrades come rally — a  
man lives  
then comrades come rally  
the Internationale  
cry me!

She screamed her last words. The hall was electrified. She walked off. Later the General Secretary confessed that he thought she was going to end, 'Fuck you'. Others bitterly commented that her last words were really 'Fuck me'. Olaf Palme managed to compose himself and tap the assembly back to sleep. For one moment they had been awake. Now they moved on to debate the next item on the day's agenda: 'Towards a New World Economic Order'.

This incident typifies the three days of the Congress. There was a lot of talk. There was a lot of back slapping. There were a lot of photographers to maintain the illusions of the very important people who had assembled apparently to talk socialism. But when their words bumped up against something real, they were exposed as just so much empty rhetoric.

After Ms Jonic's performance, for example, Judith Hart of the British Labour Party came up to her and confidentially whispered, "Bettina, dear, you did what you set out to do — you shocked us all. But don't you think, with due respect you should have sung the 'Internationale' straight after you'd done your thing?" The point of this

example is that Judith Hart had, earlier during the Congress, pointed an accusing finger at the gross consumptive habits of the First World, saying that it was inexcusable when contrasted with the plight of the Third World. She could almost have been singing Ms Jonic's words: "Hunger is human and humans are hungry".

If she had believed the bulk of her speech, liberally sprinkled with words like 'ecology', 'diminishing resources', 'This good earth', surely there should be no conflict raised in her by the song. But then there were those odd phrases she used: 'It is our duty to assist the development of the Third World — think of the potential market they represent for our products'.

The SI — not to be confused with the IS

One would not have believed that the 500 people assembled in Geneva between November 26 and 28 had any links with the founder of the Socialist International — none other than Karl Marx himself, way back in 1864. The SI is an umbrella organisation for Socialist and Labour Parties throughout the world. In this way it can be held to account for the lives of 250,000,000 people.

They are pledged to end the 'exploitation of men by men, peoples by peoples'. Yet when each delegate spoke it was obvious



that he or she (there weren't too many women delegates around) was not a representative of humanity as a whole, but a representative of his or her own party. This often leads to problems, as can be witnessed in the Bureau.

Main decisions for the SI are taken at Bureau, a body of elected representatives that is supposed to meet regularly. Congress is simply the Big Show in which Bureau decisions are made public (without any of the infighting and back-stabbing that seems to flourish behind closed doors). Of all the members of Bureau, only the General Secretary holds no political post with a party.

The General Secretary for the past seven years has been Hans Janitschek. At the 13th Congress he was given no option but to resign. Many reasons were given for the Bureau's disenchantment with him — perhaps one too many (such as the allegation that he used SI money to buy flowers for his girl friends). When such depths are plumbed to find excuses for someone's dismissal, it is wise to look elsewhere for more plausible reasons. Could it have been that Janitschek was too active a General Secretary? That, instead of being a harmless bureaucrat, he took initiatives that politically embarrassed party representatives? Was it because he dragged the SI to Bangladesh, Chile, Portugal, India? This latter suspicion was strengthened at his last Bureau meeting. While the Europeans rushed over to congratulate the incoming General Secretary, Bernt Carlsson of the Swedish

Socialist Party, a tiny group that represented 'oppressed nations' gathered round Janitschek to offer their condolences.

He was given a box of 25 Cuban cigars for his seven years' service in an organisation that believes in the 'end of exploitation'.

But then a new era must begin. The SI now has a new President, Willy Brandt, who, backed by German money, promises to rebuild a strong International. The new organisation is to have 14 Vice-Presidents, one Assistant General Secretary and a Research Assistant. The bureaucratic machine has been set up (without necessarily being an indication of any measure of efficiency). The new General Secretary wasn't at the main Congress Hall to take up his position when it was made public. He appeared an hour later and stood sheepishly by the door till he was reminded that he now had a seat with the big guns on the platform. Teething troubles, perhaps. There is yet a lot to be undone.

Ian Mikardo, in a furious speech to Bureau, criticised, for example, the current tendency of a small powerful European clique to hold private meetings and later impose their resolutions on the rest of the 58 member countries of the SI. Mikardo made it quite clear that Britain wanted no part of such a group which could spell the end of the International (which is pledged to 'equality'). His words, unhappily, were confined to the small room in which Bureau met. None of the other 450 delegates, guests and visitors assembled for the Big Show were touched.

## Meanwhile back at Congress Hall . .

Senegal had been accepted as a full member of the SI. The room exploded with the sound of African drums. A troupe of beautiful black dancers and musicians bounced through the doors. Delegates were once more woken, they climbed on to their seats for a better look.

Those assembled had been given the opportunity of seeing at first hand the energy of the people of Senegal, but they were more comfortable with the words of the Senegal President, Leopold Senghor. They understood 'balance of power', 'mineral wealth', 'parallel development', 'cultural integrity'.

And what of the dancers? Maybe they too believed the rhetoric: It states that 'the crisis in world capitalism clearly shows that Socialism, the harbinger of hope and justice, is the only alternative'. What the dancers probably do not realise is that the problem cannot be so easily defined as a 'crisis of capitalism'. Most of the countries represented at the Congress were still committed to growth economies (albeit with verbal acknowledgement of impending ecological doom).

The dancers probably did not know that the rhetoric also pledges 'solidarity in the struggle by all movements fighting for self-determination and social liberation'. The Indian Socialist Party is at present involved in just such a struggle against Mrs Gandhi's personal dictatorship in India. The Chairman of the

Party now languishes in prison waiting trial and has been denied a visit from his lawyer since his imprisonment in June. Yet when membership of the Indian Socialist Party was raised at Bureau, seven of the fifteen Bureau members present abstained from the voting. It is to Hans Janitschek's credit that the Indians have been admitted into the SI. His successor, on the other hand, has applied a 'marxist analysis' to the Indian situation (taking into account the present oil crisis) and finds total justification for Mrs Gandhi's emergency which has resulted in total press censorship, the castration of courts, imprisonment without trial, torture, compulsory sterilisation, etc.

Thus the conflict between reality and rhetoric continued. They talked of disarmament (the Israeli delegations was surrounded by an entourage of bodyguards reminiscent of the Mafia); they held a special session on sexism (a woman was flown in from New York to act as hostess for important delegates) they preached tolerance (one delegate spent three days complaining that he didn't have a name card for his desk); they called for equality (the evening buffet at the delegates' hotel cost £10.00).

And after the third day some went home, some went on to other Conferences, the Latin American trio that played so joyfully after the President of Argentina spoke returning to serenading diners at the hotel.

# What's On

A VALUES CONFERENCE is to be held on March 11-13 at Easthampstead Park, Bracknell New Town, Berks. It is to be an examination of values in personal relationships, families, work roles and life in general. Bracknell World Development Movement (et al) invite you to join with 30 people living and working in Bracknell and district to discuss the question 'Why am I doing what I am doing the way I am doing it?' Details from Ann Yarwood, Constables, Windsor Road, Ascot, Berks SL5 7LF.

PRINCIPLES AND PRACTICE OF ORGANIC HUSBANDRY is the title of a five-day course, from April 3-7, to be held at the Shropshire Farm Institute, Walford, Shrewsbury. It is organised by the Institute and the Soil Association, and will cost £25 inclusive of tuition and board and lodging.

The programme will include a simple scientific introduction to soil structure and plant nutrition, followed by the practical application of organic methods in agriculture and horticulture. The course will include a visit to Mr Sam Mayall's organic farm, and the commercial market garden at Weston Park, the Earl of Bradford's estate, also run on organic lines.

A similar 5-day course on organic husbandry will be held from 11th July to 15th July 1977 in Surrey. For further details please send a s.a.e. to the Soil Association, Walnut Tree Manor, Haughley, Stowmarket, Suffolk. IP14 3RS. Tel. Haughley 235/6.

Birmingham University ecofreaks will be meeting towards the end of March to set up an umbrella group for the Greater Birmingham area. For details of this and other activities send an 84p stamp to University, Birmingham B15 2TU. (021 472 1841).

ICAT 77 (INDUSTRY, THE COMMUNITY AND APPROPRIATE TECHNOLOGY) is being held on April 15-20, five days of events in Leeds and the North of England as a follow-up to ICAT 76 in Bradford last November. It will not be a purely Future Studies Centre event, as about 50 organisations have expressed an interest in participating. On the 16th and 17th there will be a conference at Strathmore College, and there will also be public meetings in Leeds Town Hall on April 18-19. Discussions will focus on restructuring of education, and training at all levels, alternative products from factories, local groups, and relationships between factory workers and environmentalists. Details from the Future Studies Centre. 15 Kelso Road, Leeds LS2 9PR.

RESURGENCE are having a Colloquium on Community and Planning to celebrate their 11th anniversary. It will be at their new country centre, Pentre Ifan Farm on April 16 & 17. Participants will include John Seymour, Geoffrey Ashe and Leopold Kohr. Details and tickets (£4) from Resurgence, Pentre Ifan, Felindre Farchog, Crymych, Dyfed, Wales. Phone: 023 976 317.

PLANNING IMPLICATIONS OF LOW IMPACT TECHNOLOGY is the title of a weekend course to be held at the Peak National Park Study Centre on April 15-17. It is being held in conjunction with the Dartington Amenity Research Trust and the residential course will probably cost about £25. They aim to discuss the conflicts between planners and AT enthusiasts, and also planning laws, and rural community developments. For more details of the course (there will also be an excursion to see items of interest in the local countryside) write to the Peak National Park Study Centre, Losehill Hall, Castleton, Derbyshire S30 2WB.

THE FESTIVAL OF MIND AND BODY opens at Olympia on Tuesday April 19th and runs until Sunday April 24th, from 10am-9pm daily (Sundays 6pm close). It is designed to be a Festival which will "transcend age, creed, nationality, religion, class and culture, thus bringing together a variety of people seeking the information and knowledge previously confined to the few".

The exhibition is intended to cover all aspects of the alternative culture, from Alternative Technology (exhibitors include Comtek, from Bath), through esotericism, psychic phenomena, fringe science and religion, to the arts. There will also be an extensive programme of lectures and audiovisuals and a number of related activities elsewhere in London. For further information contact The Organisers, The Festival of Mind and Body, 159 George Street, London W1; Tel: 01-723 7256.



**THE CONSERVATION SOCIETY** plan to hold a conference at Sheffield City Polytechnic on April 23-24, entitled 'The End of Economic Growth - What Next?' Topics will include population, energy, land use, food and employment. Details from Mr R. Baker, 'Hardingley', Cowley Lane, Holmesfield, Sheffield S18 5SD.

**P.S. & M.B. ROLLINS** want to start a small group to chat about ideas as in *Undercurrents/Resurgence*, say on Sunday evenings in their locality. They live at Flat 2, River House, off Manor Road, Walton-on-Thames, Surrey.

**ADVANCE WARNING!** There are plans afoot to hold a series of lecture/seminars on *Alternative Technology* at the ICA. They will be arranged by Mike Norton of the ICA, and *Undercurrents Magazine*, and will probably take place in April-May-June? Watch this space...

**TOWARD TOMORROW FAIR '77** is a country fair, exhibiting our future (!) to be held on June 24-26 at the University of Massachusetts/Amherst Campus. It is a people-centred event, sounds like a large-scale Comtek and more. If you have any desire to travel to the States and visit it, write for more info to

Michael Maguire, Fair Co-ordinator, Toward Tomorrow, 200 Hills House North, University of Massachusetts, Amherst, 01003.

**BIRMINGHAM ALTERNATIVE SOCIALISM GROUP** have called a national conference of AS groups for the weekend of April 23/24 in the new Gay Centre in Birmingham. For details, see *Peace News* or send sae to Brum AS, 64 Harbury Rd, Birmingham 12. Tel. 021-440 1379.

## STOP PRESS

The *Undercurrents-Compendium* Book Service is suspended for the time being: prospective customers should write direct to Compendium for their new 40 page A4 size catalogue (45p by post but worth it) which contains a full list of their books on AT and a selection of titles from their Building, Growing & Eating, Animal Husbandry, Crafts, Healing, Radical Psychiatry, Women, Kids, Communes, Utopian Politics, Geomancy, Fiction etc, etc, lists. It comes with an eight-page supplement on Tipi-making and is lavishly illustrated. They also have Music and Sexual Politics catalogues (10p stamp each) and hope to publish a full catalogue for the entire shop for next Christmas. Compendium Books, 234 Camden High St, London NW1. Tel 01-485 8944.

The **LAND FOR THE PEOPLE** meeting planned for the end of January in Bath is being postponed until March or April. A newsletter announcing details will be out soon. Meanwhile a London-based group will be meeting fortnightly on Mondays at 8 Leighton Crescent NW5. Phone 485 3572 or 267 1184 for details, (but not too early in the morning).

**RADICAL TECHNOLOGY AND SOCIAL CHANGE** is the title of an adult education evening course which started on January 17 at the City Lit Institute, Covent Garden convened by Dave Elliott. It aims to look at the role of Alternative Technology as a social change agent and there are sessions on specific areas - energy, food, shelter, plus general discussions of political strategy. You may still be able to enrol: contact the City Lit, Stukely St, Drury Lane, WC2B 5LJ. Course code is S36, and it's on Mondays 7.30-9.30.

**EARTH MYSTERY** paintings, sculptures and prints will be on show at the Acme Gallery, 43 Shelton St, London WC2 for three weeks from March 22.

# What's What

**ECOLOGIE** is our French counterpart; it is published bimonthly by A.P.R.E., Agence de Presse Ecologique, who also put out a weekly newsheet *Apre/hebdo*. The current issue, No. 8, contains a report on the Nairobi conference on Trade & Development, articles on the politics of the environment, autonomous houses, health, Italy, Science for the People, decentralisation, Roissy airport, the pollution of the aquifers, etc. A good read but expensive at 7F (83p) or 40F for 6 issues from Ecologie, 12 Rue du Patis, 45200 Montargis, France.

**WHOLE EARTH** No. 8 (25p post free for 24p from 11 George St, Brighton, Sussex): Life on the Land; Folkson in Sussex; the Machine Breakers; Working & Living Collectively; plus News, Reviews, etc. A good read for practical eco-freaks.

**MUSHROOM** is a quarterly magazine of the New Zealand alternative. Funky rural eco-freak. The latest issue to reach us (No 5) has articles on home childbirth, food co-ops, saddle making, growing nut trees, squatting (on loos!), Single copy NZ \$0.75, sub NZ \$220 surface mail from Mushroom c/o Post Office, Waitati, Otago, N.Z.

The latest **SCIENCE for PEOPLE** (No 34) edited by the Agricapital Group, looks at food and farming; the power of the US grain companies; Charlie Clutterbuck on Agribusiness; pesticides, Mozambique; agricultural R & D; etc. A healthy contrast to *Whole Earth* and *Mushroom*. 30p from BSSRS, 9 Poland St, London W1.

**MOTORWAY MONTHLY** is a newsletter for anti-motorway freaks, out of the FOE stable. £2.50 will bring you twelve monthly issues packed with details of current road schemes, enquiries, protests etc., or send a stamp for a free sample copy. (Friends of the Earth, 9 Poland St. London W1). Second issue now out.

**PENDERYN** is a Welsh magazine not hitherto seen in London but now stocked by Collet's London Bookshop. In English (except for 3/4 pages) the current issue (no date) contains a report on the recent Aberystwyth socialist/nationalist conference, an interview with Emrys Roberts, leader of Plaid Cymru on Merthyr Council, an interview with John Jenkins and articles on Kernow and William Price. 25p or 30p from 18 Stryd Windsor, Ucheldir, Abertawe. Recommended.

**HOMES OR JAILS?** is a new pamphlet by Christian Wolmar of Release on the threatened Criminal Trespass Bill, our rulers' 'final solution' to the 'squattening question'. The police are already genned up on the extra powers that the Bill will give them and are quietly stepping up their campaign against squatters. 15p or 25p by post from Release, c/o 1 Elgin Ave, London W9. Release also publish a quarterly newsletter; the current number contains a useful summary of the literature on cannabis by Don Aitken, a report on the steady advance of decriminalisation in the USA (passed in eight states with another twenty thinking about it) and an analysis of the latest Home Office statistics on drug addiction. 30p + 10p post; subscription £1.50 p.a.

On the dole? Guy Dauncey has put together an **UNEMPLOYMENT HANDBOOK** for his part of Devon, which has been published as a supplement to *Sherrack*, the local community paper. It would make a good model for anyone wanting to publish one in other areas. If he gets some help Guy intends to produce a national handbook, *Sherrack* is 15p + 6½p post from Holne Cross Cottage, Ashburton, Devon.

**VISIONS: ARCHWAY ROAD LIFE-WIDENING SCHEME** have just opened a small Vegan Cafe in addition to their 'Alternative Bookshop'. 155 Archway Road, London, N6.

The AT *Samizdat* movement goes from strength to strength. *Energy (Hydro-Pneumatics)*, by A.O. Groom, is a judicious fantasy along the lines of river, wave and tidal energy, available for £1.50 from the author at Sturminster Newton, Dorset, DT10 1AN. It is, as they say, lavishly illustrated - for the most part with slightly off-beat pneumatic inventions which have never yet seen the light of day but which, perhaps, ought to. All it needs is a wealthy and benevolent maritime nation to take a chance - does anybody know of one? The 'hydropneumatic cat' is particularly delightful, a boat that runs off wavepower - now, why didn't we think of that before? A must for every mind-blown engineer's coffee table.

**NEW STYLE: the review of contemporary mania** is a more specialised taste. Described as the Private Eye of the art world it is a melange of bitchy gossip (quite unintelligible to outsiders), criticism, parody & original writing. Strictly for the dilettante literati & unlikely to appeal to the serious minded folk who read *Undercurrents*! (30p for a sample copy from 7 Philpot Lane, London EC3 or 25p from progressive newsgagents).

**EARTH EXCHANGE**. As well as having the Undercurrents office this building houses natural food and craft/book shops. There are also various other group activities - weaving & spinning, gardening, alternative medicine, etc. Run as a registered charity, EE is open from 12 am-7 pm (except Monday & Thursday).

A West London branch of SERA has been set up. At the inaugural meeting before Christmas it was decided to concentrate on the problems of Heathrow Airport: noise, redundancies & transport policy. For details contact The Secretary, Andrew Thomas, 3 Poole Close, Ruislip, Middlesex.



## PSYCHOTHERAPY

Since I and my associates have for many years been exposing the defects of modern medicine and advocating responsibility for one's own health, we were delighted to find this theme taken up in most of Undercurrents 19. 'A Nation of Junkies', a report on allopathy and overprescribing, is one of the publications distributed by us.

Our work at the Centre is to enable people to discover themselves and stand on their own feet. It was therefore ironic that your writer Richard Elen, taking inaccurate information from 'Alternative England and Wales' and not checking with us, attributed to us an antiquated and suppressive form of therapy, hypno-suggestion, which is the opposite of what we do.

In the few cases that we use hypnosis, it is as an aid to self-discovery, never for indoctrination. Unlike biofeedback therapists, we don't treat symptoms. We help people untangle underlying patterns. Our approach is holistic.

Richard Elen doesn't say why he's worried about not being in control, or of what. Had he enquired, he would have found that we enable individuals to expand their consciousness — not diminish it — and to release their talents and direct them more effectively.

Incidentally, we refer our enquirers to members of our network of therapists in England and Wales, and anyone wanting information has only to write to us or drop in.

R.K. Brian

The Psychotherapy Centre  
67, Upper Berkeley Street  
London W1

## ... and AYURVEDIC MEDICINE

Shame on Richard Elen, who in his 'Guide to Alternative Medicine' (Undercurrents 19) makes no mention of the traditional Hindu Ayurvedic system of medicine. This has more practitioners than any other alternative medical system (except possibly acupuncture). There's a good introduction and bibliography in a chapter in Ayurvedic Medicine in the World Health Organisation book 'Health By The People' which Geoff Watts referred to in his article 'People, Prescribe!'

John Hubley

13 Regent Street  
Paisley  
Renfrewshire PA1 3TG

## HOMEOPATHY

I feel I must respond to your section on homeopathy to Undercurrents 19 and to your theory of how the extreme quantities work. Hahnemann recommended that drugs should be administered at the 'thirtieth potency', i.e. at a dilution of 1:10<sup>30</sup>, or one molecule in a sphere of circumference equal to the orbit of the planet Neptune. Such concentrations of any homeopathic remedy are already exceeded in our food, water and air. I think there are two reasons why homeopathy works: it gives the patient the psychological status necessary to combat the disease purely by giving his attention; and it allows the body's defence mechanisms to function naturally.

I hope your contribution to the liberation of medicine will be effective and we continue, not just fizzling out as so often happens. The liberation of medicine is as important as that of the means of production if the revolution is to succeed.

Stephen Tomkin

10 Devereux Road  
London SW11

## INACCESSIBLE KNOWLEDGE

One comment Margaret Vertuyen made (Undercurrents 19) on the politics of self-help should not go unchallenged. She states that the medical profession jealously guards its monopoly of information about health and illness. "Medical knowledge has virtually become the private property of the profession", she states. Nonsense. Medical knowledge is published in a vast range of learned journals, all of which can be borrowed if wanted by any member of the public through his or her local public library. There are also a large range of indexing and abstracting journals available so that if one wishes (say) to find out all the recent research that has been carried out on diabetes, a few days work in a library or two will



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213 Archway Road  
LONDON N6 5BN

make one more up to date on the subject than a local G.P. who doesn't have the time for keeping up to date with the literature and tends to rely on what reps tell him. True, the papers are boring to read; true, one has to understand the terminology. The real problem is not a conspiracy by the medical profession, but apathy and ignorance by the general public of the possibilities for finding out about latest medical research.

Dr. C. Oppenheim, M.I. Inf. Sc.

80, The Warren  
Billericay  
Essex

## ANGLO-SAXON TRIBES

John Fletcher wrote a very lively interesting sketch of the underlying mood of discontent and revolution among the common people of England over the last millennium or so. Why did he find it necessary to spoil it with so many inaccuracies and so much myth-making.

The rose-coloured spectacles with which he has been viewing Anglo-Saxon tribal society must have been almost opaque. I too feel there was much good in living in such a society, much that we could get back to with profit but it was a collective society not an individualistic one. One governed by many taboos and by the views of one's peers. To say that "anyone was free to tell the chief" exactly what he thought of him without fear of punishment" must be seen to be idealising rubbish.

Again, to say "the old common land was farmed 'intensively'." is hardly acceptable. Common land was very important, especially to the otherwise landless, but it was not farmed intensively, it was grazed. Intensive cultivation of the common land was what Winstanley and the Diggers fought for, unsuccessfully.

Lastly, could anyone explain the meaning of this sentence — "The Bolsheviks of the England Revolution, the Whig Aristocracy, held no doubts about the imperfection of the masses when they returned to power with the Restoration of 1660".

R.O. Faulkner

Cllr-Yr-Ychain  
Cwm-Ann  
Llanbedr-Pont-Steffan  
Dyfed

## DEFENSE OF FREIRE

I was sorry to read Nigel Gowlan's damning review of Paulo Freire's 'Education: The Practice of Freedom' as I flipped through my copy of Undercurrents 19 for the first time. I had enjoyed the book myself, as I had done 'Pedagogy of the Oppressed' earlier, and I thought that Gowlan, in his excitement about whales and dolphins, had rather missed the point. Yes, the books are a bit turgid to read until you get the hang of the ideas and the style, but that seems to me quite understandable for a writer reaching out for new ideas.

On my second, more thorough reading of Undercurrents 19, I came across John Fletcher's article 'The Secret People': "We are the people of England; and we have not spoken yet", he quotes. Now what is quite fascinating about having this article and Gowlan's review in the same issue, is that Freire is writing about and developing a technology whereby the people may be taught, may learn

to speak. He is describing what he calls a 'problem-posing pedagogy', in which the 'present, existential, concrete situation' of the people is identified, described, and posed "to the people as a problem which challenges them and requires a response". In this way, people may cease to be submerged in the situation, and become more critically aware of that situation and thus able to act to change it. This is what I understand to be the point of John Fletcher's article.

I am not saying that I fully understand all the implications of Freire's writings: nor that I know how to use his ideas to liberate the People of England (nor that I would have the guts to try if I knew). I 'do' think there may be many smaller scale projects where his ideas might be used. I am presently trying to use a problem-posing approach in a Mens' consciousness-raising group. What I really want to say is, don't let Freire off because you don't think he understands whales, and because at times he writes a shade obscurely: his writing is the zenith of liberationist thought.

Peter Reason

Centre for the Study of Organizational Change and Development  
University of Bath

## WRONG TACK

I've just seen Vic Anderson's reply in Undercurrents 19 to my 'Alternative Readers' piece in Undercurrents 18 in which I criticised the Alternative Socialism pamphlets. It strikes me, from various comments made to me since the 'Alternative Readers' piece came out, that there are as many versions of 'AS' as there are people in the Birmingham Alternative Socialism Group. All (except Keith Paton) have said they both agree and disagree with me. In some respects it's good to have different versions, providing real argument and discussion happens between these people, but if they 'do' agree on anything it just seems to be that a link must be made between the alternative society and socialism: that is a pretty slim basis, and one which most of us would agree with anyway.

No, what my basic criticism amounts to is that the AS approach starts from the wrong direction — we live in a capitalist society, so surely we need to understand the capitalist 'expressions' of paternalism, sexism, hierarchical power structuring etc. Racism, sexism and the rest do not exist as discrete phenomena, but are intimately bound up with our particular economic, political and technical systems; if you're talking about racism you're also talking about unemployment, about the labour market, about international capitalist rip-offs and so on. The problem is not simply to do with dehumanising high technology, alienating hierarchies or one-dimensional consumerist psychology, but with the reasons why these structures exist and why they are strenuously maintained. Capitalist principles and economies are intimately tied to the division of labour/races/sexes, to economic/political controls, to the legitimisation of 'authority', to the fully agreed that we need some historical understanding and perspective on contemporary radicalism, but the AS group hasn't actually done that, yet. Despite their general condemnation of conventional socialism, I think they will find that 'crea-

tive imagination' is very much alive amongst the so-called New Left (see for instance E.P. Thompson's article on Norris in 'New Left Review' No. 99). Finally I reject Vic Anderson's contention that I used the AS as a platform to put forward my ideas. I read the pamphlets, felt and still feel that they're on the wrong tack, and wrote about it, that's all.

Mike George

24 Edith Road  
London W14.

## FAIRIES' LIB

Letter sent to Fairies' Lib and Undercurrents

Dear Fairies,

It was so nice of you to write such nice and forgiving things about me to the Editor of Undercurrents. Now I know of course that you exist — if you didn't you couldn't write letters to the Editor. Thank you also for looking after my garden for me. Only would it be asking too much to ask you if you could keep the damned cabbage root fly away from my basilicas? I try what Lawrence D. Hill says but then he isn't a fairy. Anyway you don't do a bad job and don't think I'm not grateful.

I always have a suspicion too that the fairies help those that help themselves'. Much like God does.

John Seymour

Fachongle Isaf  
Trefdraeth  
Sir Benfro

## ANARCHISM FOR A.T.

This letter amounts to a plea for a greater degree of political involvement by alternative technologists.

Alternative technology systems and alternative society go naturally together. But the time must come when this sister-culture of ours has grown to such an extent that our existence as an important social force (1) comes to the attention of the governors of 'mainstream' society; (2) makes the processes of any large-scale decision-making and internal co-ordination very difficult; and (3) gives rise to basic communication difficulties. This is where politics must raise its much maligned head.

Although I get the impression that most alternative technologists would prefer to remain aloof from such grubby matters, politics really only means designing ways and means whereby such large-scale decisions can be made. Such a facility would make our social alternative far less important in the face of adversities and adversities. It would for example, facilitate neighbourhood, district or even nation-wide activity co-ordination which would in turn, help us to combat the various deleterious effects of 'mainstream' society (war, pox, pestilence and divers stupidities).

Lastly, some kind of co-ordination network would enable us to pool on information and skills to newcomers from mainstream society.

How is such a diffuse organisation to be 'got together'?

Alternative technologists appear to me to have a number of social ideas in common. Forgive me if I'm wrong, but I divine them to be the following:

- (1) People are to be considered to have status-equality as distinct from similarity or uniformity.
- (2) Decentralisation is preferable to centralisation in both politics and production.
- (3) Autonomy — an individualist concept which extreme socialist ideologues, the poor things, wrongly assume to be synonymous with 'capitalism'.
- (4) Liberty — again this implies a degree of individualism.
- (5) The adoption of a technology which is ecologically decentralised, semi-autonomous, and more conducive to a less urbanised, more 'organic' society.

These ideas are quite typical of Anarchism or another word, Federalism.

By adopting Anarchism as the political system most conducive to alternative technology and society, I believe we can communicate co-ordinating and decision-making problems are solvable.



An anarchist society is, without even elected law-makers for it assumes that all people are capable of being socially aware and are capable of making at least those decisions which affect only themselves. To assume otherwise only an elite few could ever hope to be wise enough to make political decisions.

For the time being, anarchism need amount to little more than the attempted creation of some kind of communication. Once this basic network has been established, however, it should be a relatively straightforward matter to simply add to this structure such decision-making and co-ordinating facilities as become necessary at the various levels, community/neighbourhood/district etc. I would advocate a pyramidal system of representation, that is representation from the 'communes' would debate 'community' matters at a community centre and so on, up the pyramid to the district level, then national and beyond.

These various 'social units' form the units of the federation which is a freely-linked network of equal socio-political units. Some structure of this nature would sadly become imperative if the need ever arose to defend our way of life on any kind of military scale since anarchist societies are notoriously vulnerable.

Anyway, although AT is our primary aim, I hope that I have argued convincingly for some kind of political ground.

Graham Phillips

18, Dickens Street  
Stoke-on-Trent.

## RAW OMELETTE

Mike George's review of Hugh Stretton (Undercurrents 19) contains the provoking thought of 'radical change without breaking any eggs'. It occurs to me that, if you want radical change, you can't 'afford' to break eggs. Someone, somewhere, will object to each crack. Build a windmill from old bits of scrap, a solar panel from old radiators, or a gas-lamp from an old tractor tyre, and the neighbours, or the council, will object that it's spoiling their environment. Add the fact that there's no cash in it for anyone, and you have a raw omelette that stands no chance of being allowed near the frying pan.

P.G. Millington-Wallace

2, Olive Villas  
Devoran,  
Trevor, Cornwall.

## ILL-PLACED OPTIMISM

Due to the petroleum shortage, we have been forced to use a varnished cardboard box for our 8mm film loops.

Hopefully, this is a temporary situation and we will be able to use plastic boxes in the very near future.

The above note accompanied a recently purchased film loop. It may be a sign that finite resources are beginning to bite, but what of the ill-placed optimism?

John H. Smith

King Alfred's College  
Winchester

## BOGGED DOWN

Why this emphasis on 'information'? In any case, is construction of a Ley detector important to AT? Criss crossing maps with endless lines (R. Forrest's article in Undercurrents 18) can hardly be a worthwhile contribution to AT research.

The point about relevance of information is whether it can be applied or not. Information for information's sake is fine but not essential. Our problem is that we are confronted with the stuff on such a scale these days we don't know what to do with it. Blinded by info, we stagger from one journal to another, struggling to get off. Even formed groups, dedicated to implementation of new possibilities, get bogged down by irrelevances: i.e. your concern with ley lines.

It seems that the ridiculous

mystical concerns of my youth in Ireland — mounds, burial sites, legends, Indian yoga etc retain a fascination for the 'next generation', much to my disappointment. I had hoped that such reactionary self-indulgence belonged only to the bad old days when we feebly tried to escape the straitjacket on thought instead of tearing it to pieces.

Bernard Kelly

68 Parkhill Road  
London NW3

## NO SH\*T HERE PLEASE

I have been deeply vexed to understand why you should have printed the very last letter in Undercurrents 17 letters page. For a group of people, admittedly freely, holding the manner of many of us aspiring Alternative Technologists, to degrade so much good effort by wallowing in such pathetic irrelevance is a little frightening.

You may of course find the whole matter very funny, I do not. While you may roll in mirth you drag us all down with you at a time when credibility is essential to see Alternative Technology taken seriously.

Chris Coles

347, Lower Brownhill Rd,  
Millbrook  
Southampton

## WRITERS' PRINCIPLES

I am concerned to know whether the articles in your magazine reflect the pure academic interest of the authors or whether they are deep personal statements.

This question arose in my mind when I read the review of *Co-ops* by Hermione Gowland.

I find it hard to reconcile her written words with my personal knowledge of her beliefs and practice. As one of the Directors of Earth Exchange Trading Company Ltd she runs a wholefood retail shop that is little different from an ordinary Health Food Shop. They put 25% on wholesale prices even though the shop has almost no rent to pay and is run in the main by unpaid 'volunteers'. If she is truly in favour of food co-ops why has she not begun one in the excellent Earth Exchange building? This would provide a much needed community service instead of — just another health shop. It would also enable everyone to participate equally in organising the food co-op rather than the hierarchical structure of a traditional health food shop.

If Undercurrents is to retain credibility surely the writers should write in a way consistent with their personal beliefs?

Joan Daulton

64, Mountfield Road  
London N16

### Reply:

It was with some surprise that I read of your 'personal knowledge of my beliefs and practices, since we have never met. However you could at any time have come to put your questions and comments to me personally, and indeed I hope you will do so in the future, and give me the opportunity to correct your facts and misconceptions about Earth Exchange.

If the concern you express in your letter is genuine then I expect to be able to have the opportunity very shortly of telling you my version of my beliefs and practices.

Hermione Gowland

Earth Exchange,  
213, Archway Road  
London N6.

## CHINESE NATIONALISM

Professor Needham's essay, *Pu Politics in Command*, is an intelligent appraisal of China's working transition to the new. However, the author is strangely Chinese-nationalistic in his view. After blaming divine revelation for Graeco-Hindu atomism, after downing the principle of three branches of Monotheism, he goes on to down the Buddhist influence on China and — perversely ambiguous — almost suggesting they too were advancing 'atomic speculations'. He is right in suggesting that what takes place in China today is positive. He is wrong to suggest that only the Chinese ever saw through modern false doctrines.

It is to be conceded that at one time Western intellectuals reduced all things Oriental to their own congenitally heterodox view of

an already heterodox Buddhism, so-called, which they of course labelled original, orthodox etc. At that time no doubt the Far Eastern tradition as such was not receiving justice, but the professor need not react in the opposite direction overmuch!

A.C. Stock

6, Notson Road  
South Norwood  
London SE25 4JZ

## ALTERNATIVE SUPPLIER

I have been trying for some time to obtain a 10kw alternator for my own use. Contacting the normal suppliers of this kind of equipment has resulted in my being offered new equipment only at a prohibited price. Perhaps one of your readers might know where such a machine can be obtained at a reasonable cost.

Eamon de Nais

Cottentry  
Ard na Coille  
Corrandulla  
Co. Galway.

## HOMEMADE GASMASKS

As an ardent cyclist in a city environment I am often subjected to the inhalation of traffic fumes, which often results in headaches. I would appreciate any advice on home made gas masks, and the construction of air filters to absorb various harmful gasses including modern tear gasses with render the wartime gas mask filters ineffective.

K. Ross

57, The Avenue  
London, W13.

## HEAD FOR THE HILLS

Having successfully completed the first season of 'Head for the Hills', I feel sure it is a workable proposition and would like to contact people who might be part of 'work' involved. We take parties of ten on walking expeditions camping at small farms and towing all the equipment ahead by vehicle. We're also trying to become a business in an alternative society. Such a business is not easy to define because it will always make its own shape, but it is one in which there is no sharp division between work and leisure because it is a way of life.

The people who come on the expeditions are simply sharing the cost of operating them; they haven't been sold a holiday. Partly they are paying towards a basic (but for one of simple tastes — adequate) wage for two people who maintain the support structure and lead the walk. The walks themselves are a penetration into the magical fabric of the countryside. If you are interested please write with 's.a.e.'

Lawrence Golding

21, Pembroke Ave.  
Hove  
Sussex.

## SHIFTING REALITY

I was delighted by Mr Gilbert's letter in Undercurrents 18 (titled Random Magic), on the use of randomising techniques to further 'rational' thinking. His step from the Labrador bone-oracle to the revival of mysticism as a means of stimulating scientific research is a brave one. This, together with Mr Forrest's statistical put-down of ley-lines in the same issues has stimulated me into offering my pet theory.

Mr Forrest describes maps so criss-crossed with leys that significant points and events can be assigned all over them and he argues that they show nothing that couldn't be there by chance. This may well be true. But turn the argument around, and regard the ley-maps and the bone-oracles, not as observations, but as conscious or unconscious designs to impose a pattern where there was none before. Then they change from curious or spurious phenomena into tools. This method of projecting an artificial pattern on what we are observing, is I believe, a basic human activity. It is the process employed by diviners and divinatory systems every where, and all times; including the I Ching, the

Tarot, astrology, palm-reading, and all oracles that are generally agreed on and consistently used.

But the line isn't drawn there. Languages are systems of mutually recognised symbols used to exchange information. Mathematics is another language albeit stricter than most. And science itself like the magical and metaphysical systems it claims to replace is just another method of divining and interpreting the world.

It is the way that reality shifts about our artificial points of reference, and modifies their pattern, which conveys the information we need. All systems are valid — as a whole. The answers you seek. As Mr Gilbert says: "... the system continues to be used because it works".

Richard Billam

21, Meridian Place  
Clifton

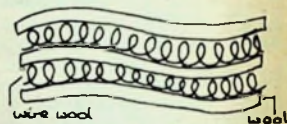
## MAKE YOUR OWN ORGONE BLANKET

Here is a description of how to make an 'Orgone Blanket'. I have been experimenting with them for a year and there's definitely 'something' in them.

Orgone is the 'life-energy' which William Reich discovered and believed was not only essential for life, but also basic to the Universe as a whole. One of the spin-offs from his work was his development of orgone accumulators in either box or blanket form.

Orgone accumulators are designed to 'catch' orgone energy and direct it into the body. This aids healing in general. Simple cuts and burns seem to heal in half the time and a whole set of illnesses respond extremely well.

Orgone blankets are really cheap and easy to make. Take one 'wool blanket' (organic) and cut it into three equal pieces. If a small piece smells of singed hair when burnt, it is wool. Don't use man-made fibres, because you must achieve a balance between 'organic' and 'inorganic' materials. Now, take a one pound pack of wire-wool (inorganic) and, by teasing it out, layer it, in two layers between the three layers of blanket. It should look like this:—



Cross-section

Then take your sandwich and sew the whole lot together with button thread, so that it looks like a quilt. Be careful of the wire wool, it can cut like a razor! You use it by laying it over part of your body. You do this until you feel you want to take it off. Like eating a meal, you will 'know' when you have had enough. Do not sleep with it, or you will 'over-use' it, but be sure to use it regularly for the best long-term effects. Don't use it in front of a live TV!

What are the effects? Immediate feelings vary from nothing at all to strong tinglings in that part of the body covered; feelings of relaxedness and a distinct 'warmth' inside you are typical. You are likely to feel the effects in your hands, your stomach should relax and gurgle noisily and you might also sweat quite strongly.

Over a long period orgone is supposed to boost your own energy so that you fight off illness and become very fit. If anyone does follow this up I would be very interested to hear about how their blankets turned out.

Mark Abraham

168, Egerton Road  
Manchester 16.

## SIGH

Dear Editors,  
What a lot of long, boring letters you print these days.  
Yours yawningly,

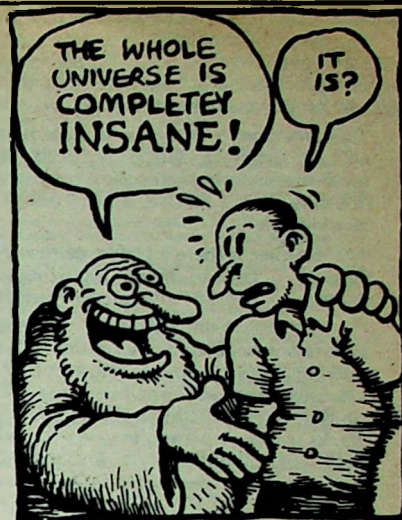
Ian Hogan

Hillside Cottage  
Old Worton Road  
Wotton-under-Edge  
Glos.

It's over to you now folks — Ed.



# STILL CRAZY AFTER ALL THESE YEARS



Yes, *Undercurrents* has been doing whatever it does for five years. Successfully? Well, merely to survive is a feat which eludes most small magazines established on virtually no money, as *Undercurrents* was, so at least by that criterion we have succeeded.

The first issue, published in January 1972, described itself as "a magazine of alternative science and technology". In the space of five short years, awareness of 'alternative technology' has grown at an explosive rate — so much so that 'AT', which we originally conceived as "technology for an alternative society", has been almost entirely co-opted by those with no interest in (or even an active resistance to) challenging the status quo. In *Tomorrow's World's* forgettable phrase, AT has become simply "other ways of doing things".

I think it's fair to say that *Undercurrents* has made a significant contribution towards the widespread appreciation of the potential of alternative technologies. But so has OPEC. More importantly, we have emphasised that the implementation of AT, if it is to be genuinely beneficial to humanity, requires nothing less than a radical restructuring of the economic, political, social and metaphysical basis of Western civilisation. (Though that doesn't mean that 'pre-mature' attempts to build alternatives 'before the revolution' are a waste of time. Far from it). And to stress the importance we attach to this fundamental reconstruction, *Undercurrents* tends to talk nowadays of 'Radical Technology' — rather than Alternative Technology — though the 'AT' epithet has a nice ring to it and somehow won't go away.

What of the next five years then? What will the world and Britain in particular be like? And how can we help to build up the strength of the Movement of which we are a part. Prognostication is always a dangerous business — but here goes.

## The Next Five Years

In Britain the North Sea oil bonanza will provide just enough wealth to balance soaring costs of the food and raw materials we import. Britain's industry is not likely to get much more competitive in the world markets, but with our devalued pound and our large oil subsidy it won't have to be. We probably won't have an 'economic miracle', but we won't have a Friedman-style catastrophic economic collapse either. In short, it'll be Business As Usual for the executives of Great Britain Inc.

This relatively undramatic economic prospect is not likely to mean, however, that things will be easy politically for those who are working towards a "fundamental shift in the balance of power and wealth in our society". The executives of Great Britain Inc. enjoy the power and privileges which go with their seats in the Director's Dining Room of the Nation: they are willing to go to considerable pains to neutralise or eliminate those radicals who would make them eat in the staff canteen. And although the strong-arm tactics used to quell discontent in previous eras are still available, the

Establishment of today prefers a more 'civilised' approach. The recent BBC Horizon programme 'Half-way to 1984' (though it merely confirmed what *Undercurrents* has been saying since issue number 7) revealed to a wider public the extent to which the State and private companies already practice sophisticated surveillance techniques aimed at spotting 'social deviation' before it happens and nipping it in the bud. For instance, we have a Police National Computer System which can spew out details of a car's ownership within seconds of feeding in its number by radio and which soon will have criminal records similarly available. (In Ulster, the system is more sophisticated and gives a foretaste of what may soon be possible on the mainland. Detailed personal records on half the population are on file and can be interrogated remotely to confirm a suspect's story at checkpoints.) Masses of information on millions of people are already on file in big data banks — such as the Vehicle Licence Computer at Swansea, and the TV Licence Computer at Bristol; on the computers operated by the Banks and Credit Cards companies; and in smaller data banks such as the DES's file on all students and Local Authorities' files on 'clients' of their Social Services. Agitation by civil liberties campaigners seems unlikely to prevent these data banks from being inter-connected, thus enabling an extremely detailed picture of a person's character and activities to be built up from the individually-insignificant scraps of information. A glimpse of the uses to which such a master file might be put can be seen in West Germany where the government has an extremely sophisticated computerised system for keeping track of criminals and subversives and operates a blacklist of supposed 'leftists' which makes it very hard for any 'radical' to get a job.

In Britain the corporate state (in both its Governmental and its commercial guises) has a virtual monopoly of the broadcast media, which it manipulates subtly but effectively when it wants to. The BBC and ITV, for example, practice a policy of not delving too deeply into the underlying causes of the Ulster conflict — a policy to which Jonathan Dimbleby and other media people voiced strident objections not long ago. Other methods of social control available to the government range from the 'Psyops' techniques which the Home Office has been teaching to Civil Servants to the low-intensity operations which Brigadier Frank Kitson has been urging on the Army. And then there are always the 'dirty tricks' squads and agents provocateurs operated by the Special Branch, M15 and the Military.

## The Movement

How should these factors influence the shape and strategy of the Movement to which we belong — the AT movement, the Radical Technology movement, the movement for an alternative society, for anarchy, for libertarian socialism, for parallel cultures, for alternative socialism, call it what you will?



The very undefinability and diffuseness of the Movement, seen by some as a criticism of it, is probably one of its major advantages. Donald Schon, describing the 'Movement' of the 60's in America, catches the flavour:

"It's an amoeba, with very unclear boundaries, with no clear structure, with a very powerful, informal, personal network that pulls the whole thing together. And not only does it survive, it turns out to be damn near invulnerable".

"... Neither is there a stable, centrally-established message. ... Instead, there's a shifting, and evolving doctrine — a family of related doctrines.

"... Its remarkable behaviour ... depends upon the *infrastructure technology* on the basis of which it operates. It is possible to know at Berkeley tomorrow what happened at Cornell yesterday. Third World factions in Algeria maintain connections with American blacks in Cleveland and in Cuba. Television permits simultaneous international witnessing of events, and makes events 'major' because they are so witnessed. Jet transport permits an international traffic in leaders, spokesmen and participants. An underground press, with readership in the millions, services blacks, students and radicals of all shades and persuasions. Telephones permit connection and co-ordination of events across the nation. Records, tapes and transistor radios spread words and music through which all shades of opinion and feeling find expression."

This kind of organisation clearly has a lot of advantages in the face of increasingly-powerful State surveillance and suppression. If they try to jail its leaders, the Movement simply shifts to new leaders. Like the classical guerrilla army, the Movement is invisible, yet everywhere.

Modern states have got good at handling traditional, hierarchical 'revolutionary' movements with identifiable leaders, card-carrying followers, fixed doctrines, and central offices. But trying to come to grips with this new entity is like trying to wrestle with a blob of jelly.

Of course it can be argued that the Movement of the 60's in America and Europe failed to sweep humanity "irresistibly across the threshold of human transformation" because, in Walter Szytkitka's words, its "vision of a new social order was imperfectly developed", and because "it fell short of stimulating an amalgamation of causes that would have forced fundamental social change".

The task of analysing in detail exactly where the 60's Movement went wrong and writing a comprehensive prescription for a new Movement strategy to take us into the 80's is probably beyond anyone's capability — it's certainly beyond mine.

But at least two basic requirements seem to me to stand out as essential if the weaknesses of the 60's are to be overcome in the 80's.

Firstly, the Movement's communications infrastructure must be improved. The passage from Donald Schon above considerably overstates the actual effectiveness of the media through which the Movement speaks to itself and to the outside world, and of the networks through which it co-ordinates its activities.

This is mainly because, especially in Europe, the Movement is still largely reliant on Establishment communication channels. Access to those channels (*Open Door* notwithstanding) is not getting any easier. Demonstrations to choose just one example, don't get the TV coverage they used to. And, thanks to inflation, the radical activist finds it increasingly difficult to find the money for train and air fares, for phone and print bills. Gone are the 60's pipe-dreams of a cornucopia of cheap communications in which everyone would be linked by coaxial cable to everyone else in one big Global Village.

As Eric Lowbury put it in *Radical Technology*: "The Global Village is no such thing. It is a Global Castle, in which the Barons may chat over their wine, while the serfs outside may overhear a few scraps of merriment".

I think it's imperative that we develop new, liberated channels of communication, and that we strengthen those which already exist.

Secondly, and even more basically, we

seems with the mass line." Chris Hutton Squire expressed uncertainty as to what a break with the Left "would mean in practice; *Undercurrents* does not at present label itself as either socialist or marxist". D.S. felt there was "a need for an *Undercurrents* that takes an alternative, independent and possibly anarchist line, or series of lines."

More subtly D.G. wondered why "everybody wanted to say *what the right means are*, but nobody seemed to think to raise the question of *what the right ends are*." "Why are we so hung up about socialism?" queried H.G., who suggested that "In order to get any answers we must first have any questions." Was it because "both Left and Right share the same materialistic dogma, the same requirement for solution by confrontation, the same penchant for violence and the politics of hate"? (R.E.) Or because "in many socialist countries people are suffering chronically under the conflicts, often personal, between a handful of 'leaders' and their divergent philosophies." (H.G.) Or even that the Left "do not yet have the breadth of vision to move beyond a stage of state capitalism." (D.S.)

In a bid to cool the passions Godfrey Boyle suggested that: "There's much that's admirable on the Left, ... from *Socialist Environment Resources Association* to the *Institute for Workers' Control*." Summing up, N.G., with his normal prescience, said *Undercurrents* "lacks a coherent, unified view." You hadn't noticed? Oh well. R.E. felt that this "breadth of vision and opinion has

# The Party Line

"'Why don't you build a windmill?' we shout at each other. 'Explore inner space!' 'Stop ignoring the occult!' 'Tap the energy of ley-lines!' 'Live in a commune!' 'Distribute your income equally!' 'Be a socialist!' 'Don't be a socialist!' And so on. Reading reports of *Undercurrents* meetings, I get a picture of half a dozen people trying to give me directions. Some of them are telling me to turn left at the crossroads, some ... to turn right, (or) ... to go straight ahead, (or) ... to turn round and go back the way I've been. But the crazy thing is, none of them has found out where it is I want to go!"

(David Gardiner)

Yes *Undercurrents*, 'a bunch of smart know-it-all bastards' (Nigel Gowland), has been having an internal debate about its role: 'an exciting display of mental gymnastics' (Herbie Girardet). For the first time — and hopefully the last time — we bring you the views behind the people behind the faceless collective. But remember: 'Brer fox said nothing, and Tar Baby just smiled', (Enid Blyton); we didn't all join in. So this is a fairly unrepresentative sample of the collectives ever-changing views, hideously distorted by Dave Smith, who reports on the subjective truth of the matter.

## Political Lines

Left, Alternative, Anarchist, or Third Way? Woody set the ball rolling when he suggested we follow a third way for: "The emphasis placed on material rewards by establishment and Left opposition alike may be about to boomerang against the Left"; and we should "break with the Left". This was quickly countered by: "I want to go for closer integration with the Left", (Martin Ince). But it was supported by Richard Elen

— "It's about time we were prepared to stand up for our beliefs, and say that we do not wish to be associated with a Left that is plainly a cure worse than the disease, or at least just the same."

The general lack of agreement was getting nowhere. Dave Kanner "thought that organised labour (even if hierarchic or infiltrated by the establishment) represents the only way for 'concerned and creative people' to associate them-



must create at least the beginnings of an alternative economic infrastructure. Without an economic base, we can accomplish virtually nothing. With it, we can achieve a great deal. Among other things, an alternative economic network could provide powerful support for workers engaged in struggles to liberate existing industries.

Such a network implies the establishment of many more co-operative, worker- and community-controlled enterprises like those listed in *In the Making* (see page 40). And it implies federations of co-operatives, linking producers, processors and consumers in a non-exploitative web, like those described in the *Vermont Tomorrow* article on page 18.

## A Vision

Amid the struggle to create alternatives, to liberate existing institutions and to combat exploitation and repression, we need, I think, to keep alight the flame that illuminates our vision of how things *might* be.

I'm irresistibly drawn to conclude with the final passage from *News from Nowhere*, in which William Morris's hero awakes in his dingy Hammersmith bedroom to find that the vision of a future world of peace, rest and harmony in which, it seemed, he had spent so many happy months, has given way to cold, sordid reality. He recalls the last look of Ellen, one of his companions in the dream, which seemed to say:

"... Go back again, now you have seen us, and your outward eyes have learned that.... there is yet a time of rest in store for the world, when mastery has changed into fellowship — but not before. .... Go back and be happier for having seen us, for having added a little hope to your struggle. Go on living while you may, striving, with whatsoever pain and labour needs must be, to build up little by little the new day of fellowship, and rest, and happiness".

Godfrey Boyle

Donald Schon *The Listener*, December 10 1970.

Donald Schon *Beyond the Stable State*, Temple Smith, London 1971.

Walter Szytkita, ed, *Public Works*, Links Books, 1975.

always been its strength." But he needn't have worried for H.G. could "see no danger of us funny lot becoming carbon copies of each other." Even as he sought to "find out whether a synthesis between the various strands is possible." So D.S. had no need to fear that we would produce "some bland consensus of opinion".

Though most of us would probably agree with H.G. when he says that "on an economic level we are concerned with redistribution of resources... within and between nations".

## Content and Discontent

Does all this discussion influence the features that will go into future issues of *Undercurrents*? Yes, and no. Let's see what G.B. has to say: "*Undercurrents* to

my mind has always had a dual role. Positive and Negative. Yin and Yang if you like. ... Information on positive, creative alternatives and how they might be built starting from now. Workers' co-ops, A.T. communes, land for the people, self-help medicine, mind expansion, new visions of the world; and so on. The focus should be on *community- scaled*, rather than individual, alternative technologies.

"*Undercurrents* also has an important negative, oppositional role in trying to expose the repressive or unjust policies being pursued by the Government and Corporations, and in encouraging struggles by those who are trying to fight that repression — I'm thinking of Green Bans, or Lucas-style industry confrontations, rather than traditional 'pay and conditions' confrontations." Which doesn't seem quite the same as W's view that the content should remain "practical articles on A.T., gardening, etc.; further development of fringe science and inner technology; historical pieces; articles on wider world; short polished essays on social topics". But perhaps M.I.'s view is dissimilar to both these points of view, because he sees this as "essentially a programme of the Left, or would be in the manner I would like to treat it. With more general politics as well as the stable nuclear power, A.T., military, community, etc."

Then things began to warm up because D.K. wants "articles on fringe science... (to) be faintly practical." He "wouldn't

# Science with a Human Face

UNDERCURRENTS has been started by some people who believe that radical views on scientific and technological subjects need a medium in which they can be aired.

Science, we feel, has largely abandoned its original 'quest for truth' — if the phrase sounds naive today, it is a measure of that abandonment. Nowadays, a significantly new scientific theory has to fight against a massive weight of bureaucratic orthodoxy and entrenched academic reputations if it is to be given a hearing. And scientific theories are only listened to if they emanate from 'senior academics' or 'respected researchers', men who, almost by definition, have cast their minds in an orthodox mould.

Technology, too, while still masquerading as mankind's great emancipator, is increasingly becoming the instrument of our enslavement. Though it continues to be regarded as simply the application of scientific rationalism to the satisfaction of human needs, technology in practice is the means whereby the unjust economy and power structure of our industrial civilisation is kept intact and entrenched. Technology no longer concerns itself with the satisfaction of individual human needs, but with the churning-out of cheaper and ever-more-sophisticated products which the masses can be persuaded they need, brainwashed as they are by the propaganda of advertising and the mass media. Keeping the wheels of industry turning in this way produces an ever-increasing national and international 'cake', extra slices of which can be thrown occasionally to the poor in case they become too discontented, provided of course that the overall distribution of wealth stays the same (the top one-fifth of Britain's population still controls three-quarters of the individual wealth of the country). More fundamentally, the supremacy in our civilisation of the scientific world-view has come under heavy fire in recent years. Critics like Theodore Roszak have led assaults on the 'myth of objective consciousness' and have charged that the scientist, whose "habitual mode of contact with the world is a cool curiosity untouched by love, tenderness or passionate wonder", has arrogated to himself an excessively dominant say in the way the world is run and viewed by its inhabitants. The scientist has been pilloried, too, by such bodies as the British Society for Social Responsibility in Science, for remaining too aloof from the uses to which scientific knowledge can be, and is being, put. As for pollution, industrialisation, standardisation, the depletion of natural resources, and the other concomitants of the industrial way of life begin to bite increasingly into people's awareness: the man in the street is beginning to wonder if the technological game is worth the environmental candle. Nobody says much about the 'white-hot technological revolution' any more.

But do science and technology intrinsically contain the seeds of humanity's undoing? Must we believe that science has irrevocably fallen from its position as the expression of one of man's highest drives — the urge to understand the world and our own place in it? And must technology remain no more than man's self-imposed licence to rape nature, rather than a means whereby we can live in sympathy and harmony with the natural world, understanding its laws and using them cooperatively for the simultaneous advantage of human beings and of the ecosystem?

UNDERCURRENTS believes it is possible to evolve a 'sadder but wiser' science, a science that is aware of its limitations as well as its strengths, which will search the hitherto ignored areas of human experience for clues to a more meaningful and relevant synthesis than is dreamt of in our present philosophies.

We also believe that technology can be reoriented, to serve not economies and governments but individual human beings — to provide an endless source of basic life energy, food, shelter, clothing and tools; to provide unfettered communications between the smaller, more human communities that our world must create if it is to avoid overpopulation, alienation, violence and all the attendant evils of the mass society; and, less importantly perhaps, to provide simple data processing and automation facilities in a way that genuinely relieves human beings of boredom and drudgery without enslaving them to machines or to their owners.

Not that UNDERCURRENTS believes that decentralisation should — or could — be carried to extremes. It is unnecessary and undesirable for humanity to regress into a disconnected series of isolated cultures. The cross-fertilisation of ideas and games that has been so vital to the evolution of our race should continue in a decentralised society, as is perfectly feasible given intelligent use of modern techniques of transportation and communication.

Five years on. Editorial in *Undercurrents* Number 1, published in January 1972.

mind reading something *new* on leys, psi phenomena, etc. but I'm fed up with the rehashing of the same few (contested) facts." He "doesn't care how many angels can dance on the head of a pin."

## Short Cuts?

Throughout all this there was a lot of concern about editing. D.K. knew "it would be nice if contributors gave us concise, polished copy of the right length. As they don't, mostly, and there isn't time to return copy for rewriting, we must edit things." Which is "one of our strengths vis-a-vis other radical papers." So "we should continue editing heavily as we do now." (C.H.S.) This left R.E. feeling uneasy: "Our editing function should be one of assisting the author to make her/his point more clearly, perhaps adjusting grammar, etc., but always in co-operation with the author." A lot of editing is a dangerous thing. Particularly if there should be any "conceptual editing" that "implies that the editor knows more about the subject than the writer". (R.E.) D.K. thought "people could register their special interests/knowledge so that key phrases wouldn't be taken out of articles by ignorant editors."

the debate goes on.

If this account of an *Undercurrents* internal discussion has not frightened you away, H.G. would like "the *Undercurrents* co-operative... to involve readers much more closely in the magazine than is the case now." At last, something we were all in agreement about.





# LAND AHOY?

"Before Christmas", one Gwent newspaper commented recently, "green-grocers were charging jewellers' prices for their vegetables". Food prices, last year, shot up by 22% and the food import bill amounted to a staggering 5,000 million pounds. Britain must become more self-reliant in food and yet, in the last couple of years food production has gone down. It is not by accident, then, that there are more and more research- and pressure groups, and even a semi-official think tank, concerned with agriculture and land use. Here's Herbert Girardet with some news and views.

'Priority for Agriculture!' Suddenly it is no longer a cry from the wilderness. Ecologists and planners, farm workers and agri-radicals, farmers and trade analysts, consumer groups . . . and even economists are saying it now. In the British context the balance of payments situation, rather than long term ecological considerations, is the main reason for the revival of official interest in agriculture and the land. The clearest indication of this is the report 'Land for Agriculture', brought out by the newly formed 'Centre for Agricultural Strategy' which is funded by the Nuffield Foundation.<sup>1</sup> Here's a sample: "All evidence indicates that a very high priority should be attached to food and timber production in the UK, and that everything possible should be done both to prevent the unnecessary loss of land from agriculture and forestry and to simulate the potential output per unit area from the land remaining in use for these purposes". The evidence collected in this report to support this view is indeed considerable. It concentrates on the competing demands made on land by urban development, recreation, mining, water resources, agriculture and forestry.

As the demand for land for purposes other than food production will continue to grow, so will the food import bill. And yet: "Potential increases in (agricultural) output per unit area will probably be more dependent on human effort and attention than previously". Well, the people who compiled this report must have been reading *Undercurrents*. In the year 2000 we'll all be gardeners and plant trees in the Welsh hills in the Christmas holidays. ("Unless the potential gap between timber import requirements and availabilities can be met by higher domestic production of timber, wood consumption per head may be rationed at less than half the present levels"). The report calls for the re-establishment of Rural Development Boards which should co-ordinate conflicting land use interests over large areas. And read this: "Establishment of a number of publicly owned hill-farm units with the view of both demonstrating and monitoring the ways in which farming and forestry can be combined . . . could lead to increasing awareness of the constraints at present inhibiting the

complementary development of forestry and farming in hill areas". Suitable areas suggested are the Welsh hills and the Scottish highlands. The criteria for such experiments are mainly economic; ecological or political considerations are almost entirely absent from the report. Possible changes in the system of land ownership are not even considered in it.

The National Union of Agricultural and Allied Workers, in its recent report, 'Outlook for Agriculture'<sup>2</sup>, also calls for Rural Development Boards for the hill areas of the UK. It also recognises the need for Britain to expand food and timber production which would, of course, be in the interests of the Union members. It also stresses the need for improvements in the rural environment. "A prosperous community in the countryside helps to create a better balance between urban and rural life and if this were accompanied by planning and assistance for the siting of suitable light industries in rural areas the balance would be even better preserved". There is strong support for public ownership of land as "... private ownership has traditionally been a source of such inequality and social injustice. It should belong to the people. . . Whilst the Union does not believe in expropriation without compensation, reasonable limits must be set with due regard to factors of both time-scale and cash". This view has got the support of sections of the Labour Party and the Union hopes that the Capital Transfer Tax and the proposed Wealth Tax will help to make it a reality. In Scotland the Scottish Labour Party, and to a lesser degree the SNP, are advocating public landownership.

## Agricapital

Landownership, surprisingly, does not seem to come very high on the list of priorities of the newly formed 'Agricapital Group' in London, which has just brought out a special issue of 'Science for People', entitled 'Food, Farming, Finance'.<sup>3</sup> This group is concentrating its research on an exploration of "the effects of Capitalism on Agriculture". For the time being priority is given to getting a better understanding of food production chains, with a focus on the exploitation of farm workers, food processing workers and

consumers. The group stresses that there is no real world food shortage, but that food exporters, particularly the USA, are manipulating the world trade in food for the sake of profits. An increase in food production is not seen as necessarily progressive, "We can now sense signs of heavy capitalist investment in agriculture. Food could be a convenient growth area in a low growth economy". Yes, a possible scenario, And it is certainly very important to investigate the role of capital in food production and processing. Few, if any, socialist groups have so far found it necessary to analyse food production and distribution in sufficient detail. Also: "Labour as a 'factor' of production is appallingly excluded from almost all research, and from most considerations as to how things get grown. For ex: Pesticides do not *per se* increase yields. They replace labour preventing disease incidence". Elsewhere a potential alliance of agricultural workers and smallholders in the struggle for community ownership of land is mentioned.

'Food, Farming, Finance' contains many penetrating observations about the present state of agriculture and the increasing multinationalisation of food processing. In an article on agricultural research in the UK it is stated that "agriculture should not be managed like a sector of manufacturing industry: it is hard to get a high return on capital investment in farming and consequently it is difficult to find investment capital; when it is run as an industry, long term problems such as declining soil fertility develop. We don't expect to use the factories of today to produce the goods of tomorrow, but we will certainly be using the same fields to produce our food". The article also states that an enormous amount of money is being spent on research into new varieties of *grain*, and particularly *wheat*, today's favourite cattle feed. But there are 90,000 possible food plants globally and only a tiny proportion of these is given attention in agricultural research.

Whilst 'Food, Farming, Finance' represents an important and necessary point of departure in the analysis of *agriculture under capitalism*, very little indication is given of how the necessary changes which are implied can come about. There is clearly the need for alliances between groups, institutions and individuals who want to reassess land use, agricultural technology and the relations of production and distribution of food. Lucas aerospace workers demand the right to make socially useful products and to change the repressive nature of work itself in the process. In other branches of industry similar initiatives have started, but not yet, it seems, in agriculture and food processing. Here the equivalent to a socially useful product is healthy food. And the demand to produce food in a healthy and satisfactory way must be as urgent to farm workers who suffer from 'harvest lung' and from skin blisters,



resulting from over-exposure to pesticides, as to bakers who have to endure the daily boredom and strain of the automated production of unhealthy white loaves.

### Radical Agriculture?

One reason why it is so difficult to bring about changes in food production and processing is the multiplicity of entrenched interests which are at stake; Agro-chemical manufacturers, farmers, food canning and freezing companies, manufacturers of agricultural equipment, meat processing firms, baking companies etc, etc. The workers in all these enterprises depend for their wages on the continuation of the production processes in which they are involved, even if they are highly 'artificial'. Food workers have a stake in high productivity per person, as all workers do. A shift to more sustainable methods of food production would endanger some of the agricultural support industries and would therefore effect employment in these sectors. It would thus be of dubious interest to the workers concerned.

There is every indication, then, that changes in agricultural practices will be gradual. Whilst it is widely accepted now that there must be sustainable increases in production per acre, all evidence suggests that this can now be achieved only by greater numbers of people working the land. This would, of course, mean an historical and unprecedented reversal of current trends within the agricultural labour force... by the end of 1976 the number of farm workers was still going down, to little over 300,000 in England and Wales, as it has done for a couple of centuries. *More people on the land* is commonly viewed with suspicion, as a utopian phantasy, as a reversal of

progress. This suspicion is fully justified if the suggestion is that there should simply be more exploited workers on the land who work for somebody else's profit. It is, then, a question from which political standpoint such a suggestion is made and what strategies are suggested to bring such a development about. A rather stereotype left-wing view would be to suggest that only "under socialism can agriculture find a more rational role". Socialism doesn't automatically mean sounder ecological attitudes, or does it? But redistribution of wealth, including land, would certainly be a precondition for more rational use of land. But not the only one.

Can the merits of co-operative farms or new agriculturally based settlements be demonstrated within a capitalist system? OR: Can there be 'liberated' islands in the ocean of capitalism? The evidence on this is conflicting, to say the least. Rural *communes* haven't been an unqualified success story so far. This has been the result of lack of capital and expertise as well as of rather vague preconceptions about communal working and living. Most rural communes are small, a group of people all under one roof. There is a lack of diversity of age groups. Often there are culture clashes with the 'local population' and many communes haven't lasted long enough to overcome these. Failure is all too often caused by an insufficient economic base. And the lack of common aims and emotional incompatibility have undermined many communes.

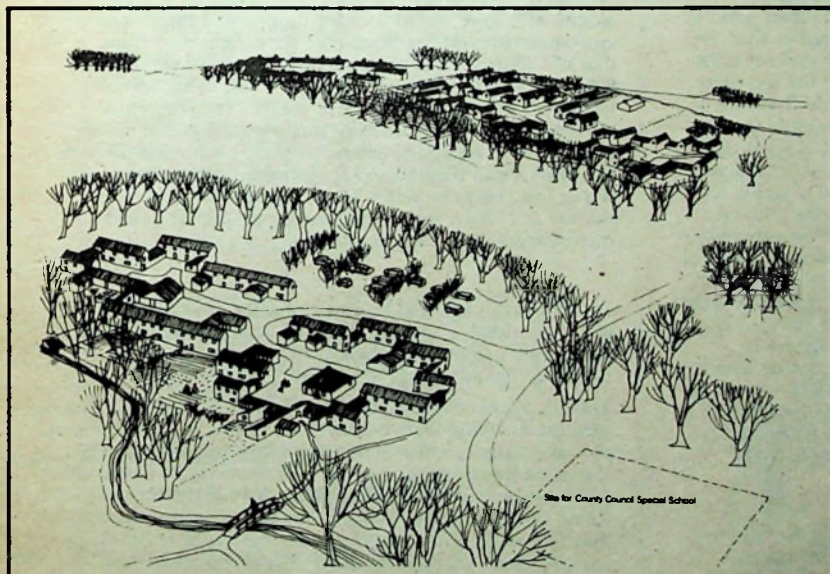
Most cottages and houses in rural areas are too small to make a sustainable communal way of life possible. The growing urge to start up new agricultural communities has so far been largely frustrated in Britain, through lack of capital and because of the rigid attitudes

of the planning authorities to changes in the agricultural landscape. The main underlying reason for this is to thwart attempts of speculative development on farm land. And in order to make it easier to provide services in the countryside government and local authorities encourage development within and around existing rural centres. Because of the very small numbers of people required to run the present food production system — one worker for about 100 acres — the building of new accommodation on farms is severely restricted. Attempts at starting up communities on existing farms are therefore extremely difficult to put into practice, as things stand at the moment. But as it seems to be quite generally recognised now that more people should, and *want* to, work the land, one can hope that changes in legislation, and in the attitudes of planning authorities, will be brought about.

This is one of the aims of the Dartington Hall Trust in Devon which has put in a planning application for two new hamlets on the edge of the village of Dartington to Devon County Council. Whilst providing badly needed accommodation for local people, the aim is to provide "a good social and community environment related to the surrounding countryside". The land around the proposed clusters would be available for small scale farming by the people in the neighbourhood. The Trust has so far been refused planning permission by the local Council which was supported by the Ministry of Agriculture, but there is some hope that the Environment Minister may reverse this decision.

All in all, changes in agriculture and in land use policy in a predominantly urban society are likely to come about slowly, linked closely to changes in the fortunes of a capitalist economy. The present crisis situation has led to analytical as well as to creative responses as I have tried to show in this article. Much work needs still to be done if we are to get coherent perspectives and strategies for change. At present several agricultural colleges are threatened with closure as a result of public expenditure cuts and this must be opposed, even if the kind of agriculture taught there is part of the problem we are up against. It is time there was a public debate on agriculture and land use, the issues at stake involve *all our* lives and are too important to be decided upon by a tiny minority of the population. There is reason to think that, at least, a start has been made.

Herbert Girardet



This is a plan, by Tom Hancock, of the proposed two hamlets which the Dartington Hall Trust wants to build in Devon. In the centre of the 'cluster' there are communal buildings, incl. nursery schools, workshops, meeting hall, etc. These are surrounded by dwellings and kitchen gardens. There is a tree belt and the surrounding farm land would be cultivated by the inhabitants of the hamlets, most of whom would be local people in need of better housing. Devon County Council has refused, so far, to allow the development to go ahead, but an appeal has been lodged at the Ministry of the Environment.

1. Land for Agriculture, Centre for Agricultural Strategy, University of Reading, Early Gate, Reading RG6 2AT; £1.30.
2. Outlook for Agriculture, NUAW, Headland House, 308 Gray's Inn Road, London WC1X 8DS; 35 pence.
3. Food, Farming, Finance, Science for the People, 9 Poland Street, London W1; 40 pence.



The population of Britain can be divided into two classes; those who are afraid that the things Tony Benn talks about will come to pass; and those who are afraid they won't. Benn's recent pronouncements on topics as varied as Nationalisation, Marxism and Workers' Control have earned him the odium of the Right and the (occasional) grudging admiration of the Left.

In this interview with Tony Montague of the Brighton Whole Earth Group, a less-familiar aspect of Comrade Benn emerges; his enthusiasm for the story of the 17th Century Diggers.



How is it that you first came to be interested in the Levellers and Diggers?

I first came across them in 1961. Hugh Gaitskell recommended that the Labour Party abandon its commitment to common ownership and suggested that we give up Clause Four and adopt a new, very general series of objectives. We had a meeting of the National Executive and Walter Padley, who comes from Oxfordshire and is one of the most knowledgeable people in the Labour Party about its history, launched into a speech about this and reminded us that the principles of common ownership were deeply rooted in the history of the Labour Party. He went back to the Levellers and Diggers in the 1640's and I think that's the first time I had ever heard of them. I became deeply interested in them about two and a half years ago and have read a great deal about them since. The words that the Levellers and Diggers wrote and the strength of their message is still amazing for those who take the trouble to read and understand them. The Diggers believed in a full-scale socialist commonwealth. The Levellers, although their pamphleteers were very radical, represented more liberal values of the kind that emerged in the French and American revolutions. The Diggers connected themselves most intimately with the land and believed it should be held in common. The Levellers' tradition is important too because it is enshrined in many other social revolutions since. But the Diggers' revolution is far more relevant in many ways today, because the Levellers' battle has in some ways been won, in the developed world. What the Diggers were saying and doing would seem to make sense literally today.

Do you think that the commune movement, or if you like, the recent movement towards greater self-reliance and common ownership and active involvement with the land is in some sense the inheritor of that form of Radicalism?

I don't think you can ever suppress ideas like these. The extraordinary thing to me is what a rich inheritance we have of the tradition that now expresses itself in the commune

## '....everybody on the period in

movement, for example, or indeed in the socialist thinking about egalitarianism and democracy. These go right back in our history. People who fought for the communes were dismissed as long haired hippies and idle people and so on. But it's a great comfort to find that this is not a new battle. It's been fought over a long period. Those who argue for the communes or for socialist ideas have got a tradition as rich and as varied, and as deeply rooted in our national history as the tradition which has been symbolised by conquerors, kings and feudal landlords. Unfortunately, children are not really allowed to learn about it at school, because if they were, people would see things very differently.

What relevance, do you think, does the co-operative, back-to-the-land movement have today in the wider perspective of socialism?

I don't think that you can ever put the clock back in the sense that you can destroy or eliminate the technology that man's genius has brought forth from the earth. On the other hand, power is a neutral thing. It's a question how you use it. And therefore the more power you have, the more attention has to be focussed on the control of it. That is, the real benefit of democratic control. A lot of people who were scornful of the hippies and the commune movement when it first began are now beginning to see that the control becomes impossible beyond a certain scale. Schumacher's book *Small is Beautiful* was an indication of this by a serious manager and academic. The commune movement, the movement towards devolution, the movement towards industrial democracy, the movement for open government; all these things are movements that are at one, if you like, with the idea that we've got to recreate a community out of the great hierarchical pyramid of power and management. And I agree with that.

What does this mean in terms of a back-to-the-land movement, considering the possibility of large numbers of people going back to the land, whether full-time, or part-time, or whatever. Do you think that is just a pipe dream?

There is a great desire to do it, isn't there? You can't separate mankind from the land. It's a very deep attachment, even in England, which is now primarily an urban society. There are lots of ways of going back to the land. One is the commune movement itself, another is a way I personally found very exciting to observe: the idea they have in China that everybody should work on the land for a period in the year. If I were told that in order to be a minister I had to spend a month on the land, it would be a great physical strain at my age, but at the same time I think it would be good for health, and make for a better understanding of the cycles of nature which city life tend to obscure. It would be difficult to feed a country of our size from its



# should work land for a the year.'

own land, but of course food prices will rise like oil prices, and therefore the economics of agriculture will certainly tilt back towards the cultivation of our land. I don't think any part of the globe will be able to afford to ignore its land. Any nation that weakens its link with the land perishes, of that I am absolutely sure.

If the land is — to use Winstanley's words — 'a common treasury', how do you see this treasury being returned to the common people?

First of all, we have an obligation not to damage it for future generations; that is the most important issue. There is a big discussion now about the environment, about pesticides, about the future of energy. Secondly, you get the question of who should own it, and that takes you back to very old aspirations for common ownership. But here you have got the problem of people's attachment to it — and taking a man off his land has never been put forward by us as a proposal — so the question is, can you have some other way of registering the fact that you can only hold the land in trust? But that takes you into a political problem. Thirdly, there is the question of farming it, and developing it. And though a lot of people would like to go to the land they can't now afford to because much of the money — that's the profits made in recent years — has gone into land speculation instead of going into industrial development which it should have done. That has pushed up the price of land, and agricultural land is now much more expensive than it was a few years ago. Land is the only absolutely limited resource. You can add to any resource but you can't add to land — and that makes it all the more necessary that the laws governing the land and its use should have due regard to the need to preserve it for the future and not abuse it, or wrongly use it, in each generation.

So you don't think in terms of anything like 'nationalisation of the land?'

We have always talked about that in the context of development of the land, and that's political. But the feeling that people who own land have about the land they own is so very deep — and the object, anyway, is not to deprive people of the land, it is to see that the land is better used. This is something we still have to think about.

And to give people access to it.

Absolutely. Absolutely right, absolutely right.

What do you think is the future of the ideas of the Levellers and Diggers? Do you think that this feeling for them will develop, and their place in history will be restored to them?

Yes I do. We've had a long period of very rapid, headlong economic growth. To use the Bible phrase, we've had the seven fat years, we've now got the seven lean years and we

are in a period of recession. When everyone asks what has gone wrong, people go back to their roots. At the moment the Conservative Party has gone back to Adam Smith, and the ideas of early capitalism. The Labour Party has gone back to Clause Four and common ownership, and the Archbishop of Canterbury when he was appointed said we must all re-read the Ten Commandments. I think that we have come to the end of the road. When you get lost in the maze, you begin following the papertrail back to where you came. And the need for us to understand and reassess our own history, and its traditions, seems to be very very urgent. One of the reasons why I am excited about the Levellers and the Diggers is because theirs is a very strong message, coming with great force over a long time. It gives me hope that people should know that tradition is at least as much their inheritance as is all the glamour and attention given to kings and bishops, prime ministers — and today to big executives or even pop stars. This other tradition is more deeply rooted in the hearts and minds of people than all the grandeur and splendour of feudal ritual. I think it's of value, and I think it's a help, and I think more and more people want to know about it.

Gerrard Winstanley, *The Law of Freedom and other Writings*, Pelican  
Christopher Hill, *The World Turned Upside Down*, Pelican  
H.N. Brailsford, *The Levellers and the English Revolution*, Cresset Press

Film: Kevin Brownlow, 'Winstanley', distrib. by The Other Cinema, London.





# CHEMICAL CORNUCOPIA COLLAPSES

It's alright to talk about organically grown food, but what about feeding the rest of the world? I mean, there's already a terrible food shortage, isn't there? And organic farming doesn't produce yields anywhere near as high as those of agribusiness methods, we all know that. But do we? Reading about the future of food production leads Dave Smith to wonder quite how efficient orthodox farming is, and what one should believe about food shortages.

1976 HAS been a record year for wheat<sup>1</sup>, and indeed, it seems for soya-beans, maize and most other crops<sup>2</sup>. Such an abundance of food might be expected to lower food prices and reduce malnutrition. But experience shows that this is only a marginal effect. Restrictions on land planted to wheat will be re-introduced in Canada, Australia and the USA; particularly in the USA where government grants are used to keep arable land out of production<sup>1 & 3</sup>, and Public Law 480 will be used to sell surplus grain to needy countries. As Susan George details in her book<sup>4</sup>, the United States grain companies and the US balance of trade will be the principal benefactors. In the EEC the butter and beef mountains will probably grow. And some twelve per cent of the world population will remain undernourished or starve to death<sup>5</sup>. Up to twenty-five per cent will continue to be malnourished<sup>6</sup>. How can this shameful paradox occur — a surplus of food and millions starving? The partial answer can be found from a study of prices.

of so many people for several reasons. The high yields of farmers in the developed countries have been gained as the result of agricultural research and intensive use of expensive machinery, fertilisers, insecticides, diesel oil etc. All the farmers' inputs use valuable raw materials; oil, metals and potash. Being of limited amount, scarcity continues to push up their price. As oil tripled in price, so did oil-based fertilisers<sup>4</sup>. To keep this method of farming viable farmers receive government support through guaranteed minimum prices for farm produce. We can applaud the giving of incentives to farmers to increase their food production to feed the hungry. However, these incentives cost money, and in Mexico this has helped to devalue the Mexican peso three times in recent months, thus increasing the price to the Mexican of already pricey food.

## Hogging Fertiliser

Efforts to obtain the new high yields in the underdeveloped countries have received many setbacks. In 1968-9 some

ring the farming methods of the developed countries to the developing countries offers slight prospect of alleviating malnutrition. Because when all the inputs have been purchased, the food grown is too expensive to sell locally and so is sold on the world market. Using money from cash crops to purchase food is normally detrimental to the country concerned. Mali typifies this situation, cash-crop export revenues do not even cover the cost of food imports. In recent years of famine locally grown food has fallen from 60,000 tons in 1967 to 15,000 in 1975, while land devoted to cotton and peanuts has increased dramatically<sup>11</sup>.

## Costly Revolution

The problems of monoculture and agribusiness methods in general are magnified by the Green Revolution. Selective breeding of wheat in Mexico and rice in the Philippines aimed to produce crop strains that respond to large volumes of water and dressings of fertiliser by producing large yields. Delicate hybrids, they are more dependent on pesticides than even the corn in the US; some 20% of which was lost to Southern Corn Blight in 1970<sup>12</sup>. Miracle rice in Indonesia has been seriously threatened by the grassy stunt virus<sup>13</sup>. Now insecticide resistant pests have sprung up. The cost of developing new pesticides is exorbitant. An American estimate put it at \$10,000,000 in 1974, up from \$4,000,000 in 1967<sup>14</sup>. These costs are passed on to farmers and so to consumers. In many countries economics dictates that insecticides such as DDT, that are banned in many developed countries, have to be used.

The result of all this expense, is an increase in the number of landless and unemployed; with a corresponding increase in farm size. (See 4, 12 and 3 for a detailed examination of social, welfare and ecological aspects of the Green Revolution). Large farms do not necessarily produce the greatest yield per acre, though this is the view staunchly advanced in most development programmes. Recent studies in Guatemala, for example, have shown yields ten and sixty per cent higher on small farms<sup>15</sup>. Which is not surprising when you realise that Ministry for Agriculture figures for 1970-72 show a similar effect in the UK<sup>16</sup>.

The increase in landless added to the increasing population amplifies the pressure on marginal farmland. In India and Pakistan floods are exacerbated by deforestation in Nepal where peasants farming the hillsides accelerate erosion. Similarly over-farming in West Africa has led to widespread erosion and soil degradation. (A multitude of similar examples are to be found in 7).

## Population Under Control

Bleak — that is how the future looks for world food production. But overpopulation is not the insurmountable

RECENT CHANGES IN EXPORT PRICE  
OF SELECTED AGRICULTURAL COMMODITIES

	WHEAT US No 2 Fob Gulf	RICE Thai White Fob Bangkok	MAIZE Yellow No 2 Fob Gulf	SOYA BEANS US CII Rotterdam
1971	62	129	58	126
1972	70	151	56	140
1973	139	368	98	290
1974	208	568	126	720

Source: Preliminary Assessment of the World Food Situation Present and Future  
UN Document E/CONF 65/Prep/6

## Your Money or Your Life

To put it quite simply: *there is enough, if not a surplus of food, for those who can afford it*. Food prices continue to rise faster than incomes. Most of us in the UK can tighten our belts and make do; poor people in poor countries die. 1976 may not have brought famines of the headline catching magnitude of that in the Sahel in 1975, when an estimated 100,000 people died, but famine is still endemic in many parts of the world.

Food prices remain beyond the means

eighty per cent of fertiliser was used in the developed world<sup>8</sup>. The situation had not changed a great deal by 1974 when the Food and Agricultural Organisation estimated the corresponding figure was eighty-five per cent<sup>9</sup>. In the intervening period fertiliser manufacturers tailored production to effective demand. There is now little surplus capacity and fertiliser companies have record profits. (Some idea of just how difficult it is to make fertiliser part of a solution to world hunger is to be found in 10.)

However, even if such major problems as raising the money to purchase enough fertiliser were overcome, simply transfer-



problem it first seems. The annual rate of population increase worldwide fell between 1970 and '75 from 1.9% to 1.4%<sup>2</sup>. West Germany and Britain, amongst others, have zero population growth. Brutish methods of imposing population control have not led to a decline in the birth rate in India. However, successful land reform and higher incomes have caused the birth rate to fall from 41 to 26 in Taiwan, and from 45 to 30 per thousand in Korea<sup>4</sup>.

Similarly, when thoughtfully applied, new farming methods increase productivity and local incomes. In Kizilcayhamam, in Turkey, the farmers were in a desperate plight. Forest had been stripped from the hills and goats were destroying the remaining vegetation. As a result cows were underfed and giving low yields. Rations for farmers were provided by the FAO's World Food Programme to encourage them to stay in the area and help with reafforestation. Sheep and cows were brought in to replace the goats. Slopes were terraced and higher yielding cattle introduced. The net income of the farmers has increased up to eight times. The whole project, for 40,000 villagers, cost a mere 544,000 dollars<sup>8</sup>. Other examples are to be found in Kenya<sup>4</sup> and Guatemala<sup>14</sup>.

Unfortunately, the demand to use up land recklessly to feed the developed world is as insistent as ever, and is aided by various governments. The Brazilian government, for instance, has paid out £150 million in income tax discounts to foreign companies to develop cattle ranches in Amazonia. Most of the companies plan to export the beef<sup>17</sup>. The labourers live in appalling conditions; local and foreign elites will continue to live in style.

## Land Reform

The land reforms and support for the small farmer needed to reduce worldwide poverty are unlikely, without some unexpected change of heart by governments and agribusiness companies. Pressure on these organisations may produce the required changes – if they think it's worth their while. Alternatively, political solutions, perhaps mass movements like the *National Union of Campesinos* (peasant farmers) in Honduras<sup>18</sup>, may well be needed to force the issue.

We've discussed why monoculture farming methods, with their large inputs, produce increasingly dear food at a high price to the environment and an ever-rising number of landless rural unemployed. So it's only natural to see how organic farming compares.

Today the majority of small farmers in the world still farm organically. They could not afford to do otherwise. Sometimes they use methods of slash, burn, plant, reap and move on, for instance in West Africa. But more often the same land has been farmed intensively for hundreds of years; for instance parts of China have been highly cultivated for at least 4,000 years without loss of fertility<sup>19</sup>. By comparison



**In the Sahel, for example, livestock health improvement programmes reduced mortality among cattle and so led to overgrazing.**

inorganic fertilisers were not discovered till 1840 and have only been widely used since WWII. The resulting rise in yields has been wrested from the ground partly by going against nature, rather than working with it.

## Pests like Herbicides

We've seen that pest control is an intensifying war. The usage of pesticides is particularly crude. Insecticides are often used with weedkillers to keep weeds down. These very weeds are the habitat of the natural predators of the insects the insecticide is used to control. Thus the natural enemies of the pests are reduced, leaving resistant pests to multiply rapidly. I. Noka and David Pimental from the Central Research Institute for Agriculture at Bogor, Indonesia and Cornell University in New York showed that untreated maize in test plots acquired about 600 aphids per sixty ears by September, but maize that had been exposed to 0.55 kg per hectare of 2,4-D, which is the normal level of application, had almost 1700 aphids per sixty ears. Similar effects were observed with corn borer moths infection<sup>20</sup>.

How long scientists can continue to keep ahead on the pest control treadmill is anybody's guess. Whether it is wise to continue in this way is a different matter. There is unresolved doubt, for instance, about the dangers to human health from nitrogen fertilisers, the use of antibiotics on livestock, and the use of some pesticides.

That there will always be some diseased produce with organic farming is accepted, but this will be limited by biological controls. However, there is evidence, albeit circumstantial, that using only organic fertilisers, e.g. compost, increases the resistance of plants to insects and disease. In the course of the Haughly experiment there were several instances where the organic section resisted infestation better than the stockless and mixed (conventional or orthodox) sections, for example against weevils<sup>19</sup>.

## Comparative Yields

Discussion of the environmental consequences of organic and conven-

tional (agrochemical users) is very important. But can organic farming produce high enough yields to feed a growing world population?

A classic study by Lockeretz et al<sup>21</sup> in the American cornbelt, showed yields for conventionally grown maize and soyabeans 27% and 8% higher respectively in 1975, a year of excellent growing conditions. But in 1974, with poor weather, the figures for wheat were almost identical, while soya beans grown organically gave an 11% higher yield. Over the two years soya bean yields average out equal for the two methods, while conventionally grown maize easily outperformed organically grown maize.

The overall profitability of both methods was the same, on average, due to the higher costs on the conventional farms. Labour costs were about 12% higher on the organic farms. 2.3 times as much energy was used in growing the conventional crops.

No doubt the profitability of organic farming would be emphasised by farmers who make their living from it. Almost fifty of whom are registered with Organic Farmers and Growers Limited. Details of two organic farmers are to be found in 22).

But what about the nutritional value of the crops? Rising conventional yields are partly countered by increasing water content (tomatoes<sup>3</sup>, wheat<sup>23</sup>) and decreasing protein (rice). So high yields are made at the danger of a decline in nutritional value.

## Conventional Farming Too Energetic

The above evidence all suggests that the performance of organic and conventional farming does not favour the latter as much as expected. How will future developments affect the comparison? Apart from ecological constraints, an increasingly important constraint is the availability of energy, that is oil. Some years ago it was established that ancient farming methods produce more energy output for a given energy input. Chinese peasants in the 1930's achieved higher energy output to input ratios than orthodox methods do today. In the UK Gerald Leach<sup>24</sup> estimated the ratio of total energy in to energy out was 2.9 (1968). David Pimental<sup>25</sup> gave the inverse ratio of output to input as 3.18 for corn in 1950 in the US. The difference is mainly because the UK figures are an average of various farm types, energy is consumed in the inefficient production of animal protein from feed. Phipps and Pain<sup>26</sup> have shown, tentatively, that the increase in maize yields have been gained with an allied decrease in energy efficiency.

The rising energy cost is just another reason why orthodox farming may well become uneconomical this century, even if its energy efficiency increases. There is growing research into organic farming methods by private groups such as the newly formed International Institute for Biological Husbandry and



the Pye Research Centre, and at Universities. Organic farming is becoming increasingly respectable and widespread as the problems of orthodox agriculture grow. We may all be a lot healthier as a result.

Dave Smith

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25. *The Energy to Grow Maize*, Pain and Phipps, New Scientist, 15 May 1976. Many of these references may be in your local university or agricultural college library.

# THE WHOLE FOOD CHAIN

Let's look for a change not at what is to be done but at what has been done. In an effort to overcome the insularity for which these fair isles are infamous, we now look at a large Canadian food distribution co-op and at a US attempt to control the whole food chain within a community. It's no little matter to reverse the trend towards bigger farms and over-processed food by taking every stage of food growing, processing and distribution into our own hands. Here's how these other groups of people, in different circumstances, have wrestled with some problems that are all too familiar in the back to the land and food co-op movements in the UK.

VERMONT 1870; a state meeting its own demands for, and even exporting a surplus of, fruit, vegetables, meat and grain. Vermont, 1976: a state of consumers who can barely afford to eat processed food imported from other states; living next to farmers who can barely afford to produce the one product that accounts for 85% of the state's agricultural economy: milk for city-dwellers in New York. Yes, it's the familiar story of the mechanisation of agriculture forcing farmers to the point where they have to raise money to modernise or sell out to bigger farmers — or to gigantic corporations who can find the capital needed to do so.

In Vermont's case the bulk, refrigerated, milk-storage tank was the first of many technological developments that set this process in motion within this mainly dairy farming state. The process was accelerated by the enforced expenditure demanded to meet compulsory government farming regulations such as these requiring farmers to build milk-houses with stainless steel tanks and sinks, and hot and cold running water and to replace wooden barn floors with concrete ones. Greater capital costs necessitate greater volume: more cows, milking machines, another tractor, hay and grain for herds which

had grown beyond the capacity of the land to feed them. Thus the process was compounded and the 10,000 farms of 1954 had dwindled to 3,700 by 1976.

However, all is not lost, for agribusiness is oil business, and, with the swift increase in oil prices in the last few years, this is its main weakness. Therefore, it is now feasible to create an alternative food system whose main strength is a decreased reliance on petroleum and petroleum by-products for cultivation, fertilisation, harvesting, processing, packing and transportation.

## New Life

To encourage this, Vermont Tomorrow, a statewide citizen action group, and Community College of Vermont, a community-based adult education college, have written a pamphlet, *Food and Agriculture: A Citizen Guide to Community Action*, describing the development of a 'Locally Integrated Food Economy', or *LIFE*. The advantages of a *LIFE* are:

- \* reduced energy costs because of the decreased distance between producer and consumer.

- \* reduced food costs because of the elimination of excessive profits, numerous middlemen, over-processing and fancy packaging.

- \* superior food quality and nutritional content through the avoidance of additives and preservatives.

- \* restoration of an economic base for rural country life.

The main components of a *LIFE* that already exist are food distribution co-ops, grower co-ops, community gardens, canning centres and restaurants, and farmer's markets. The creation of local food distribution co-ops in the early 1970's sparked off most of these food related activities. Consumers need producers as much as the latter need the former. So the first step in organising locally must be to form a core of buyers committed to co-operative ideals and to nutritious, local food, rather than cheap food. Initially this can be done without local sources of food.

Vermont now has thirteen regional food-distribution co-ops, each consisting of many neighbourhood groups, which are small food-sharing co-ops in themselves. Each neighbourhood group has a volunteer co-ordinator who insures the smooth running of that group. The pick up, breakdown and distribution of supplies is done by the members of the neighbourhood group. Regional co-ops often have paid employees. The co-ops also serve as social groups and stimulate local food growing and processing activities.

## Co-operate to survive

Farmers, or growers, co-ops are formed on the understanding that, unless growers can cut their costs and pool resources and know-how through co-operative effort, there is little but romantic hope for a revival of small-





scale farming. The homesteaders who survive 'off the land' have generally been those with substantial assets, or the rare combination of outstanding drive and superior education.

To facilitate local food growing, contacts are drawn up between consumer and producer groups. For instance, with vegetables, the food co-op meets to assess the total demand for each variety. The growers then meet to decide who is to plant what, where and in what order. Since the key to control is processing, growers can, and do, join together with consumers in developing local storage, processing and preservation systems. They should not let marketing fall into the hands of managers and food company agents, who, by fixing prices, can put grower co-ops out of business in the same way as they have decided the fate of many individual farmers.

Farmers' markets are seasonal, provide an outlet for growers' excess produce, and supply consumers with fresh food. Market days can also be social events. Unfortunately, it is difficult to lure people out of their normal shopping routine of visiting the supermarket, and many people who value fresh produce grow their own. Nevertheless, the 15 farmers' markets in Vermont had a turnover of about \$50,000 in 1975.

### Community Gardens

Community gardens in cities and towns, transform unused and often unproductive land into productive gardens, and often lead on to other communal activities, such as food canning (see below). Most of the laying out of plots, preparing the soil, ordering of seed and supplying necessary tools is done by the garden co-ordinator. The gardeners do the rest. A small fee is charged to cover costs, but no applicants for plots are turned away because of inability to pay, or lack of gardening skill. By 1975 there were roughly a hundred community gardens, totalling almost 152 acres.

Food canning centres fill an important position in the *LIFE*, by providing an efficient and inexpensive means of preserving local produce and helping to replace the food processing companies. The first centre opened in 1975 with all the necessary equipment for preparing and heat processing fruit, vegetables, meat and fish. This included cider presses, electric juicers and pulpers, bean slicers, pea hullers, grain grinders, and food dryers. In return for using the equipment a small fee is charged. People who used the centre at first had very little idea of how to use it, but, with the help of assistants, soon learnt, and



returned many times, often putting by enough food for a year. Grower co-ops could also use the canning centres, three more of which opened in 1976.

### Food Co-ops B.C.

A *LIFE* has begun to grow in Vermont. Already the idea has spread to other parts of America; notably British Columbia. There the initial stage of forming groups of consumers committed to co-operative ideals was passed some years ago. Now some sixty local food co-ops for consumers run the Fed-up food distribution co-op based in Vancouver. Its turnover of over \$600,000 dwarfs that of British counterparts such as: Suma, Neals Yard, and even Community Supplies.

Other links in the British Columbia *LIFE* are still in their infancy, but include, bee-keeping, jam making, and farming. It's a Herculean task trying to run such a large group on democratic lines, and it's made more complicated because they are scattered over several hundred square miles of Canada. But here's how it is done:

Each member co-op of Fed-up is run by members of that local co-op. Each fortnight the local co-op submits its order according to a schedule organised by Fed-up. The orders are invoiced, prepared and despatched by the paid members of Fed-up, the paid collective, with the help of the work week collective of the week. The work week collective is made up of two members from each of up to four local co-ops. The rota of co-ops submitting volunteers for the work week, at the central warehouse, is arranged by the paid collective. There are five paid workers in the paid collective.

To meet all the demands of the co-ops the catalogue of mainly food supplies lists several hundred items: five types of sugar, six of rice, seven of syrup, and so on. The catalogue is often accompanied by several pages explaining the nature of the suppliers and particular products, and generally removing the anonymity that surrounds the food we eat. Unfortunately there is a shortage of food producing co-ops. Similarly, the desire to provide food at low cost to members

has resulted in a tendency to deal with major suppliers: though they make a conscious effort to buy from local suppliers, this could deny the small producer access to this ready-made market.

### Who makes decisions?

Control of the whole process stems from approximately quarterly meetings of representatives from the local co-ops. At these council meetings major decisions, for example, on who to buy from, how to run the work weeks, and what attitude to take towards decentralisation, are made. Day to day decisions on running the central warehouse are taken by the paid collective in conjunction with the work week collective. However, there are no guidelines on, and a great deal of uncertainty about which decisions the paid collective can make. For instance, who decides on expensive capital expenditure that may arise suddenly? Naturally, the paid collective have felt some resentment at being told how to run the central warehouse, and how much they should be paid, by co-ops who only send two workers to the warehouse every two months to work for a week.

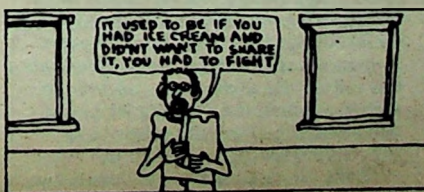
What is to stop Fed-up following an equivalent path to that taken by the Co-operative Wholesale Society in this country, and becoming the same as any other company, except for a few minor details? Perhaps their own awareness of the problem; perhaps because many of the local co-ops do not want to be dependent on one monolithic supplier.

This part of the article is the result of reading three issues of *The Catalyst*, which is Fed-up's newspaper produced by the newspaper committee, PO Box 4838, Vancouver, yearly subscription \$3.50. The Fed-up co-op has a whole sub-culture of its own, and I hope I have understood it.

Dave Smith

### Footnotes

1. Contact Richard Groveshall, 5 State Street, Montpelier, Vermont, 05602 for further information, and details of availability and price of copies of *Vermont Tomorrow*.
2. For advice on how to start a food co-op see *Food Co-op*, Colin Hines, Friends of the Earth, 60p, reviewed in *Undercurrents* 19. To find the address of your nearest food co-op look in *Alternative England and Wales*, Nicholas Saunders, which has an extensive, though dated list (updated in the *AE & W. Supplement*, *Undercurrents* 13). A more recent listing for the London area appeared in *Time Out*, issue no. 347, November 12-18, 1976. In the North of England Northern Wholefoods (In The Making page this issue), supply teens of food co-ops and twenty-five shops with wholefoods. Neal's Yard (*What's What*, *Undercurrents* 19), Community Supplies and Harmony supply food in bulk in the London area (see telephone directory for addresses and phone numbers).





# CAMBODIA

## Can You Spare a Dime?

"There are two very good reasons for concentrating some attention on what has been going on in Cambodia, tiny and insignificant though the country may appear to be in a world overshadowed by nine-digit superpowers. The first is that there has been systematic distortion and invention about it in the Western news media, in itself sufficient cause for suspicion and an *a priori* indication of deep underlying significance. The second is that we may take the revolution there as a kind of parable — an allegorical reminder of Man's portion as child of Mother Earth." Malcolm Caldwell, who has visited Asia frequently, has done a great deal of research into Cambodia's recent history and these are his conclusions.

It will be recalled that Cambodia succeeded in remaining technically neutral in the Indochina war until 1970 (though subjected to 'secret' American bombing and forays for some time before that). In 1970, the White House threw out the legitimate ruler, Prince Sihanouk, and installed a military puppet, General Lon Nol. The people of Cambodia rose in revolt, and within a comparatively short time had seized control of the food-producing rural areas from the U.S. appointed *gauleiters*.

Although Cambodian yields had, as a result of penal taxation and repression, fallen under French colonial rule, the country had remained capable of exporting a healthy share of the rice entering international trade. Independent under Sihanouk, Cambodia continued to provide about 5% of the world's tradeable rice.

With American intervention, catastrophe overwhelmed the land and people of Cambodia. Repeated pattern bombing of unprecedented ferocity and concentration reduced much of the countryside to deep-cratered mud and rubble. Hundreds of thousands of peasants who had seen their fields churned into pitted slime and their villages into charnel-houses fled — some into the relative security of the capital city Phnom Penh, others — in bitter anger — into the guerrilla areas. Ultimately, some three million people were trapped in a beleaguered Phnom Penh under American control, while four million fought in the ravaged countryside.

Accustomed though we may have become to such exercises in unctuous dissimulation, the subsequent chorus of accusations of brutality and callousness launched by the West (orchestrated from Washington) at the Khmer Rouge guerrillas deserves particular notice and analysis. Therefore we must retrace our steps a little to set the scene realistically. Current accounts, understandably, tend to dwell only on the day before yesterday, when American responsibility virtually ceased.

### The Lon Nol regime

America was far from being fortuitous-

ly, unwillingly, pulled into conflict in Cambodia. On the contrary, plotting to unseat Sihanouk and replace him by Lon Nol started in the mid-1960's, and constant attempts to 'de-stabilise' the country long pre-dated the eventual coup which triggered all-out war. The grey-suited collar and tie men in Washington coolly planned the devastation of the country — the destruction of dams and irrigation works, the chemical poisoning of crops, the pulverisation of padi fields. B 52's cut swaths exact and regular enough to satisfy any bureaucrat.

It must be stressed that this immense capacity for 'food denial' destruction by the US went hand in hand with an unrivalled capacity to supply food. American grain surpluses had long been capable of cushioning the whole world against sporadic global crop shortfalls. Now, as a result of the sustained aerial onslaught on the Cambodian countryside, Washington found itself saddled with some three million Cambodians crowded into the few urban areas to which it was able to hang on. They had no chance of growing their own food, for the fields were denied to them, but America not only had grain, and to spare, but specifically had rice (having become, post-war, the biggest exporter of rice in the world), and had the carrying capacity (ships, cargo planes, trucks) to deliver it.

Let us pause here to recall the torrents of abuse heaped by America and her allies upon the Khmer Rouge since the liberation of Cambodia in April 1975. They have consistently been accused of callousness towards and cruel neglect of the people, of over-working them in the fields, and of severely rationing food for them. What of the American record, then, when the US Embassy ruled Phnom Penh? The verdict of those outside observers who were in or visited the besieged city during the five years is unanimous: *food for the people came low on the list of priorities*, so low, in fact, that when the Mekong River had been closed by guerrilla action, and only a tenuous airlink served the city, virtually all cargo space was devoted to

more ammunition and weapons for the further devastation of the Cambodian countryside and the further slaughter of Cambodia's peasants in arms.

Furthermore, the American government explicitly washed its hands of the problem of feeding all the people it had rendered homeless or otherwise caused to be trapped in Phnom Penh. With a cynicism bordering on sadism, US spokesmen said that America could not detract from the 'sovereignty' of Lon Nol's 'Khmer Republic' — something Washington had set up and incapable of unsupported existence. Voluntary organisations did what they could, but it was pitifully little. Hunger demonstrations became commonplace. Deaths by starvation and by disease brought on by prolonged malnutrition soared alarmingly. The few hospitals and dispensaries were unhygienically overcrowded. To the bitter end, however, the US frantically concentrated its dwindling transport lifelines on the movement of death-dealing bullets, bombs, shells, rockets and the like. When Phnom Penh was finally liberated there were no food stocks. The last Americans to leave abandoned the city and its inhabitants to their fate, sabotaging all the public services as a last vindictive gesture.

### The rise of the Khmer Rouge

In the liberated areas, the picture during the same period was quite different. Despite the bombing, the guerrillas strove tirelessly to build up food production. Irrigation works were repaired and extended. Double-cropping was spread to most of the controlled area. New crops were encouraged. Every soldier was also a field worker. Four tasks had to be accomplished: first, to feed the people; second, to feed the main force fighters charged with completing the liberation of the country; third, to have a surplus to export in exchange for vital goods which could not be produced (or could not be produced in sufficient quantity) in the liberated areas; and fourth, to lay up enough rice to feed the three million people of Phnom Penh when it was liberated.

Consider the magnitude of the last undertaking. The bomb-scarred rural reaches of Cambodia could barely support the four million peasants and fighters toiling in the crater-riddled fields. Yet, on the inevitable freeing of Phnom Penh, the same war-battered land would be expected to feed nearly double the number. Contrary to the image sedulously fostered in the Western press of peasant bands erupting into the city and rampaging in mindless, uncontrolled vengeance, the truth is that much care and planning had been done by the Khmer Rouge leadership in order to avert what could well have been a tragedy of awful proportions, with millions succumbing to hunger and disease.

Khieu Samphan, one of the guerrilla leaders and himself of poor peasant extraction, had been pondering the question of Phnom Penh for many years. As a doctoral student in Paris, he had



concluded in his thesis that more than 80% of the normal peace-time population of the city were purely parasitical — 'paper-shufflers' and coupon-clippers battenning upon the economic surplus produced with the sweat of their brows by the exploited peasants. In 1967, despairing of constitutional redress, he joined the guerrillas.

After 1970, as the liberated area rapidly expanded, Khieu Samphan and other leading cadres began preparation for absorbing Phnom Penh. Current rice production was taxed to provide a growing reserve, adequate for the maintenance of two-and-a-half to three million people for the months that would intervene between their freeing and the first harvest in the preparation of which their own labour could be harnessed. This in itself was a stupendous achievement. Reserves of rice were stored throughout the country, major holdings sited near Phnom Penh ready to be dispensed to the starving survivors of the long-besieged city as they fanned out into the countryside. Identity cards for the registration of the relieved were printed well in advance.

The date of the final assault upon Phnom Penh was fixed well ahead of the time: mid-April. This allowed just enough time to reallocate the population before the crucial planting time for the year's main harvest in the Fall. The soldiers who entered Phnom Penh, plus some skilled personnel freed when the capital was taken, stayed in the city to restore the essential services and to adapt the few factories to the production of such necessities of life as soap, batteries, and so on. Otherwise, the people were adjured to make preparations to meet their own needs, for instance, by planting cotton or cultivating mulberry trees (to feed silkworms). Money was abolished, as it had been in the liberated areas, and all exchange was by barter.

The crisis was averted. Enough rice had been accumulated to support — albeit barely — the population of Phnom Penh until they reaped their own first crop. Foresight and concern were rewarded. Praise rather than execration would seem to have been called for, but that is seriously to misunderstand the psychology behind the demented reaction in the West to these developments.

In the first place, there undoubtedly was great suffering in the process. Even hospital cases had to be moved, because of the imminent danger of uncontrollable epidemics. There were neither trucks nor petrol to do the moving, and despite the field hospitals which had been improvised throughout the country to cope with the victims of US barbarism, many undoubtedly died in transit. Two considerations should, however, be borne in mind. *The whole emergency operation would never have been necessary had it not been decided years before in Washington to 'destabilise' the country.* And many times more people would have died of hunger and disease if left, as the Americans had left them, bereft of food, medicine and public services in Phnom Penh.



### Self-Reliance

Cambodia is but the most dramatic and clearcut manifestation yet of a trend which, in a multitude of forms, is flowing world-wide more and more strongly: towards national self-sufficiency, decentralisation, and *reassertion of the enduring priority of the primary sector*. When we look back over the history of industrial capitalism (and industrialisation on the Russian pattern, whatever it may most accurately be called), the features of it which attract more and more attention, discussion and analysis are those pertaining to what has come to be known as the periphery — namely those areas which suffered the worst consequences of the international extension of capitalism and reaped few of the benefits (and no unalloyed benefits). For fully to understand the fleetingness, artificiality and irrepeatability of the 'model' posed by the core countries — the overdeveloped countries, if you like — one must reckon the cost and consequence for the countries which were involuntarily incorporated in the system and forced to contribute so much.

Let us take but one example, though it happens to be one of peculiar importance and centrality to the argument. As a country like Britain (or France, or the USA, or Japan) developed, the primary sector shrank, yet was able to support steadily swelling secondary and tertiary sectors. It is important to note, however, that *this process was only made possible by extending the primary sector on the global scale*. Much secondary development (textile weaving, shipbuilding, and so on) which had already taken place in the non-European world was blocked and went under. Peasant cultivation was pushed into hitherto unopened land, and everywhere intensified. Large segments of the populations of the third world were pressed into cash crop cultivation or sent down the rapidly growing number and variety of mines. Colonial surplus thus extracted on the labour and from the resources of the periphery enabled secondary industry to be continuously extended in the core countries, and a growing tertiary ('service') sector to burgeon, too. It should be noted that

an enlarged tertiary sector was also imposed upon each of the periphery countries, supported also from their surplus, in order to supervise the process of exploitation and to suppress local resistance.

Now it could be argued that the tertiary sector in the overdeveloped countries does contribute something to popular welfare (leaving aside such activities as entertainment, advertising, and the like), most notably in administering distribution of the forms of social support and advancement such as direct benefits and educational opportunity. However, even this is not a strong argument, since the working classes fortunate enough to live in welfare states by and large pay enough in taxes to cover every benefit and service provided (and often enough, despite this, have to suffer indignities in extracting their entitlement). But there is another consideration of greater moment, and that is that relatively high working class living standards have historically been made possible by transfer of value (by various means) from the undeveloped countries of the world. In turn, non-productive tertiary sector employees have, one way or another, diverted a considerable portion of this for their own support, whether as pop stars or bureaucrats, with the bureaucracy in particular emerging as a group peculiarly well able to preserve its gains, add to its numbers continuously, and in general oppose any attempt to reverse this trend. There seems very little room for doubt that the working classes of the overdeveloped countries would be considerably better off if the tertiary sector were to be really drastically pruned.

But that is to see things in an unreal isolation. First, let us return to the underdeveloped countries. The leaders of the peasant guerrilla in Cambodia were quite correct to detect that the tertiary sector in unliberated (neo-colonial) countries is almost entirely — if not wholly — a net burden upon the workers and peasants of the country, taking much but giving nothing, waxing fat helping alien capitalist corporations to plunder the wealth and labour of the countries nominally entrusted to them. They are, in fact, part of the servicing of the transfer of value about which we talked above, and which — apart from contributing to the enrichment of the few — contributes to the comparative comfort and welfare of the many in the overdeveloped countries. In post-revolution Cambodia, the tertiary sector was quite simply eliminated.

Let us suppose that other countries once liberated from enmeshment in the net of international capitalism opt for a development strategy as radical as that of Cambodia. The channels by which value has been transferred historically will dry up. Let us merely enumerate a couple. As each liberated country restricts export of its primary products (diverting them to domestic purposes), a further continuous rise in their general price level will be inevitable. Moreover, many of the manufactured goods presently marketed



in the unliberated third world will become unsaleable there, intensifying competition between the overdeveloped countries for each others' markets, and inevitably provoking a trade war characterised by protective restrictionism. The terms of trade will shift, steadily lowering the real wages of the working class in the presently rich countries. To the unproductive in the tertiary sector will be added more and more unemployed (partly from loss of overseas sales, partly from automation, computerisation and other such examples of 'progress'). As overseas sales contract, the ability of overdeveloped countries like Britain to buy essential imports such as food and certain industrial raw materials (and ultimately energy) will contract more than proportionately. No orthodox 'remedy' currently being bandied about by leaders of the main political parties (or by their bureaucratic advisers) remotely matches up to this challenge.

### Lessons for the West

But there is one obvious course open to the overdeveloped countries. And that is to adapt to their own circumstances the strategy being hammered out in liberated third world countries, such as Cambodia: to re-seek economic independence. As a matter of fact, it is apparent that, if the majority of liberated third world countries *do* pursue the attainment of balanced economies, free of unequal entanglements with the contracting capitalist world (and they certainly will) (*vide* China, North Korea, Vietnam and Laos in addition to Cambodia), sooner or later the presently rich countries will have no choice but to do the same. Western prosperity was founded upon creation of a world-wide economic system dominated by, and operated for the benefit of, the original industrialising countries; it is now being dismantled against their stubborn resistance. The resistance is ultimately futile. What is required is intelligent accommodation to realities.

With foresight we can achieve this. On this occasion I will attempt no more than a listing of the most important minimum components. The first is food self-sufficiency, and the maximum possible self-sufficiency in all other essential inputs contributing to production of indispensable human use-values (shelter, clothing, etc.). Some overdeveloped countries are better placed in this respect than others (e.g. Britain is relatively better-off in terms of natural endowment than Japan). The second is re-absorption of all those presently involuntarily unemployed or employed but objectively unproductive, into the producing labour force — in agriculture and in the manufacture of indispensable human use-values. The third is decentralisation of policy structures and decision making to the lowest sustainable levels for each particular essential purpose and service. And the fourth must clearly be establishment of relations of friendship and solidarity with the liberated countries of the third world

Malcolm Caldwell

As we are moving closer to 1984 the control of technology is becoming a central issue in the struggle between reactionary and progressive forces in society. The alternative technology movement has a lot to offer and a lot to learn, as David Dickson points out.

# WHO CONTROLS TECHNOLOGY?

IN THIS ARTICLE I want to offer some thoughts on the relationship between the alternative technology movement and the political situation in which the movement — particularly its British component — currently exists.

By this, I do not merely mean its relationship to industrial capitalism in the late twentieth century, but to Britain here and now in 1977, where we have the highest level of unemployment for almost 40 years, a Labour government busy divesting itself of the last shreds of socialism and mortgaging our future to international financiers, and a level of inflation that will result in a continuing fall in the standard of living of most members of the community over the next few years.

One result of all these factors is, I suggest, the increasing importance of technology and technical innovation as an agent of social control. This is certainly true at the level of explicit coercion where, as a number of articles in *Undercurrents* and elsewhere have pointed out, the technological armoury of the military and police forces is increasingly designed primarily to reinforce social stability by dealing with civilian disturbances (see, for example, BSSRS's *The New Technology of Repression*, soon to be published by Penguin).

But it is also true in a more general sense. The technology which people use and depend upon in all the conventional aspects of their lives — for travelling, for working in a factory or an office, or even for entertainment is being used as a way of confining them to certain accepted patterns of behaviour — namely those that coincide with the political and economic norms of a capitalist society. And the more this becomes true, the more it is important to keep alive the alternative technology debate in order to demonstrate that there is no way of carrying out any form of social or socially-defined activity that is 'merely' technical, and consequently that technology is a legitimate area of political concern and action.

### Growth Paradox

In the first half of the 1970's there have been widespread debates about the conflicts between patterns of social development based on increasingly advanced technology, and the environmental impact of that development, such as ecological disturbance, the diminishing availability of certain energy resources, and so on. These debates have coincided in political circles with grow-

ing doubts about the validity of the magic formulae that we were offered in the 1950s and 1960s, namely that the energetic stimulation of science and technology — through the rapid increase in research budgets or in the output of scientifically-trained graduates for example — would be sufficient to guarantee an economic prosperity that would diffuse gradually from the industrialised West to all countries of the world.

Yet despite repeated indications that this may be the wrong formula, the environmental and economic problems in which it has resulted have paradoxically produced among economists and politicians not any scepticism or doubt about Western patterns of technological growth, but a *reaffirmation* of confidence in the importance of such growth. Thus we have demands for concentrating on wealth 'production' rather than 'consumption', for massive cutbacks in 'non-productive' social services such as health and education — as if these were not an essential component of any society's productive mechanisms — and for reducing the number of arts and social science graduates to allow for an increase in those taking science and engineering subjects.

One clue to this paradox is provided by the fact that technology does not merely play a direct control role in society. Even ways of speaking about technology — what might loosely be called technology policy — play a comparable role at the ideological level. In other words, if a particular system of social organisation and control is maintained by a particular type of technological development, then the defence of the technology under that system becomes part of the defence of the system itself. To put it another way, if technology is not neutral, but is a concrete manifestation of the dominant power relationships within a society — in our case the class relationships of capitalism — then to oppose the dominant patterns of technological growth is equivalent to opposing those power relationships. This is a lesson that the alternative technology movement has, I suggest, both learnt through its failures, and taught through its successes. It is, I believe, the single most important contribution that the movement has to make to the political debates and struggles of the late 1970s, far more significant than the design of increasingly efficient solar panels or effective organic fertilisers (important as these are).



## Control over Education

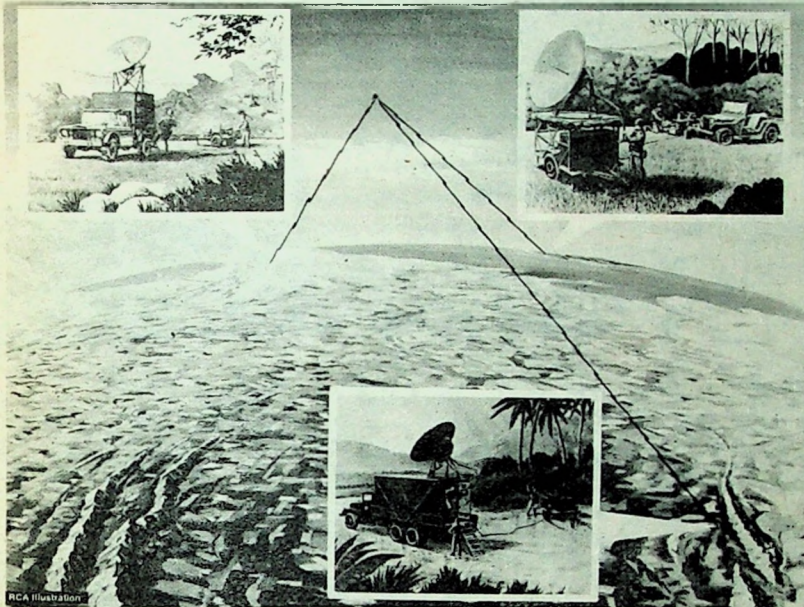
If we look at current Government policies, then one important area in which the link between technology and power is becoming increasingly explicit is in the field of education. For it is the educational institutions which, reinforced by the mass media, mould human activity and consciousness into the dominant ways of 'doing things' and 'thinking things' respectively. It is no accident that the government has been able to use the present economic situation to legitimate attempts to impose, through the Department of Education and Science, increasingly centralised control over the content of the school curriculum, and hence to eliminate some of the more radical approaches to the educational process that have been developing in recent

managers. The prime requirement is not to be able to create technology, but to exploit it commercially; and this requires a very different type of skill.

As the professor of marketing at Manchester University recently expressed it:

"The graduate in science or technology must be able to analyse a profit or loss account as well as design machine tools if he is to have general management potential. In other words educational curricula must add to the reservoir of entrepreneurial talent in society so that our economy will develop and grow".

It should cause little surprise to learn that this remark was made during the 1976 chairman's lecture at the Stock Exchange.



years. This is not to argue that all such new approaches were necessarily desirable; but at least they allowed a space in which alternative ways of doing things and thinking about things could be explored. It is this space which is now being steadily eliminated by the demands for the reinstatement of 'basic skills' — i.e. the skills required to obey the behaviour codes of capitalist society — with the substitution of impersonal rules for personal contact, formal literacy for emotional expression, numeracy for creativity, and so on.

Comparable changes are taking place at the level of higher education. The era in which higher education was valued and offered to all as something worth having in its own right — however dubious this claim — is now coming to an end. Today industry is demanding not more social scientists or arts graduates, but more scientists and technologists. And the demand is not for quantity as such, nor even for a greater intellectual ability in science and technology graduates. It is for those who possess the skills and potentialities to become technologically-trained

## Technetronic Totalitarianism

Even at the explicitly political level, technology is playing an increasingly important role as an agent of social control. It is surely no coincidence that one of President Carter's first appointments should have been an expert in the relationship between totalitarianism and technology — Columbia sociologist Professor Zbigniew Brzezinski as national security adviser. In his study *Totalitarian Dictatorship and Autocracy* (New York, 1966), written with Carl Friedrich, Brzezinski came to the conclusion that four out of six elements common to most dictatorships and autocracies — namely monopolistic control of communications, weapons, terror, and the economy — relied heavily on technology. Unlike Kissinger's essentially military interpretation of the balance of power, Brzezinski prefers to see the equations written in technological terms, talking of a 'global consciousness' resulting from the spread of communications and transport technology in what he has called the 'technetronic age'.

It is not difficult to see Western capitalism moving steadily in this general totali-

tarian direction, using technological development as its main line of advance. What appear on the surface as growing economic pressures with political consequences are, in fact, partly the manifestations of the political contradictions they appear to exacerbate. Moves to further ruling class interests on both a national and international scale require forms of economic policy directed towards the maximisation of private profit, not primarily towards social need. The result is the massive wastage of potentially productive labour and skill, and the diversion of capital from production to speculation, with a capital-intensive profit-oriented technology that reinforces both of these tendencies.

The intimate link between technology and political power means that as capitalism pursues its economic and political goals with increasing singlemindedness, so technological innovation becomes a focal point for the clash of class interests. At work, for example, the Government has already dropped some of its plans for introducing safety legislation because of complaints from employers that it will be too expensive adequately to protect the lives of their employees. And technological innovation is being used in a number of industries to combat the pressures of wage demands, by raising the threat of the dole queue. The introduction of new printing technology into Fleet Street is a prime example here, since the sole reason for introducing computer typesetting is not to produce better, more attractive or cheaper newspapers, but to replace highly-skilled craftsmen.

## Co-operative Relationships

Similar tendencies can be detected on environmental issues, where the recently-fashionable concern for preserving environmental integrity is giving way once again to naked economic demand. Modern production technology provides a physical manifestation not only of the relationship between people engaged in productive work, but also of the relationship between people and the natural environment. Under capitalism, both these relationships tend to be exploitative: in other words, those in possession of economic wealth use that wealth to dominate and control its source, whether it is the productive labour of others, or the resources provided by the environment. The more precarious the position of those in power, the more determined will they be to maintain their position, and the more exploitative will be the measures they take to do so.

As this happens, the struggle to establish a new set of relationships between people engaged in production, and between them and the environment — a relationship of co-operation rather than exploitation, of harmony rather than conflict — becomes both more urgent and more difficult. But it is to this struggle that the alternative technology movement has a responsibility to contribute as much weight it can muster.







The dehumanising effects of capitalist science and technology will assume new dimensions in the coming years which can only be overcome by a new unity between scientific, technological and manual workers. Mike Cooley, of the Lucas Aerospace Shopstewards Combine, argues that the campaign for the right to work on socially useful products is a valid starting point but it can come to fruition only within an entirely different political framework.

# Masses versus Multinationals

THE ATTITUDE of both the public and the scientific community to the consequences of scientific and technological development has changed dramatically since the first edition of *Undercurrents* appeared. In 1972, to question the neutrality of science with almost any scientist was akin to questioning the existence of Santa Claus with a 3-year-old. In both cases, the notion was simply unthinkable.

Even in the case of thoughtful, Marxist scientists there was at that time hardly a chink in the Bernalian analysis of 20th Century science. In this analysis science, although it was integral to capitalism, was ultimately in contradiction with it. Capitalism continuously frustrated the potential of science for human good. Thus, the problems thrown up by the application of science and technology were viewed as capitalism's misuse of its potential. The contradiction between science and capitalism was viewed as the incapacity of capitalism to invest adequately, to plan for science, and to provide a rational framework for its widespread application for the elimination of disease, poverty and toil. The forces of production — in particular, science and technology — were viewed as ideologically neutral, and it was considered that the development of these forces was inherently positive and progressive. It was held that the more these productive forces — technology, science, human skill, knowledge and abundant 'dead labour' (fixed capital) — developed under capitalism, the easier would the transition to socialism be.

## Science is not Neutral

The past five years have seen a growing challenge to this rather mechanistic interpretation of the Marxian thesis. There is now a growing realisation that science has embodied within it many of the ideological assumptions of the society that has given rise to it. The questioning of the neutrality of science and the reaction to the application of science as at present practised, will assume significant political dimensions during the next five years. It will appear in many different forms throughout the fabric of society as a whole. This is already showing itself as an anti-science movement, a sort of 1970s technological version of the counter-culture of the 60s. It views science as evil, totalitarian and devoid of those attributes which would make it amenable to the 'human spirit'. This total rejection will gradually give way to much more mature questioning about the

fundamental nature of science and technology as practised in Western society.

The basis of our so-called scientific method will increasingly be challenged and will be perceived to be, amongst other things, a control mechanism not merely of non-human nature but, through the scientisation of culture, as a means of enslaving humanity as a whole. The more science is used for what is euphemistically termed 'the control of nature', the more

by no means be limited to scientists and philosophers at universities. Increasingly, those at the point of production who are gradually integrated into the productive forces will find the contradictions of science and technology impacting themselves upon their individual lives. Their knowledge will be appropriated from them and objectivised into computer software, there to oppose them as an alien and opposite force, just as the skill of manual workers was appropriated from them at an earlier historical stage. Further, since scientists and technologists will represent a growing sector of the workforce (in some industries it is already over 50%) it will inevitably follow that their work will be subjected to the fragmentation and scrutiny of scientific management — that is, Taylorism.

Thus, the relative freedom which they had enjoyed in the past will increasingly be denied them as they are subordinated to the means of scientific production. Gradually, they will be subordinated to the machines (computers) and processes which they themselves have devised, and like manual workers before them will experience severe mental, physical and ocular stress as they attempt to keep pace with the machines. In the field of scientific work in general, there will be a change in the organic composition of capital. By that one means that the processes will become capital-intensive, rather than labour-intensive and will give rise to the same contradictions, including structural unemployment, that have already arisen in the fields of manual work.

Those working for the massive multinational corporations will increasingly find that there is no place there for free thinking, that they are mere industrial fodder to be taken, as Arnold Weinstock of GEC once said, "and squeezed till the pips squeak". Indeed Weinstock, through his brutal rationalisation programmes in the late 60s, did much to make scientific workers realise that their natural allies were to be found amongst the working class at large.

## The Old-Fashioned Sack

Obviously, the status-consciousness of scientific workers will continue to be exploited by the employers, but this exploitation will become more and more transparent. In announcing a large-scale redundancy recently, a West London engineering organisation declared its scientists and technologists "technologically displaced", its scientific and administrative workers "surplus to requirements", and its manual workers

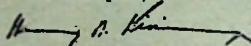
THE WHITE HOUSE  
WASHINGTON

November 9, 1970

Dear Mr. Morriam:

Thank you very much for your letter of October 23 and the enclosed paper on United States policy toward Latin America. I have read it carefully and I have passed it to those members of my staff who deal with Latin American matters. It is very helpful to have your thoughts and recommendations, and we shall certainly take them into account. I am grateful for your taking the time to give them to me.

With best regards,

  
Henry A. Kissinger

Mr. William A. Morriam  
Vice President  
International Telephone and  
Telegraph Corporation  
1707 L Street, N.W.  
Washington, D.C. 20036

Henry Kissinger's letter to the Vice President of ITT, not long before the coup which toppled Chile's democratically-elected Marxist President Allende and replaced him with a repressive military dictatorship.

will it be used by ruling elites to control individual human behaviour. The purely mathematical basis of what is regarded as the Western Scientific Method will increasingly be challenged. The notion that if you cannot quantify something it doesn't exist will be increasingly untenable, and more and more sectors of the community will refuse to have their common-sense bludgeoned into silence by so-called 'scientific' explanations.

## Computer Software — an Alien Force

Decisions which, in the past, would have been accepted as scientific and hence rational (to oppose them would therefore have been irrational) will increasingly be seen to be ideology-laden and serving specific class roles. This development will



"redundant", In fact, of course, they had all got the good old-fashioned Sack. In spite of different social, cultural and educational backgrounds, they had a common interest in fighting the closure of their plant. And they did. Scientists and technologists paraded around the factory carrying banners demanding the right to work, in a struggle that would have been inconceivable five years ago. This will be a growing and important tendency; technological change will 'proletarianise' them more and more.

In spite of so-called 'Job Enrichment' schemes, the predominant feature will be for Taylorism to make industry more and more grotesque, with narrow, fragmented alienating tasks. Faced with this dehumanisation, there will be a great temptation for the more sensitive, creative, and even politically-active scientists and technologists to opt out, leaving the remainder of those who work in scientifically-based industry to a sort of Marcusean Hell. The attraction of a small-scale co-operative or a commune in the countryside will seem increasingly strong. At the best, the emergence of small-scale alternative, co-operative industries, can be viewed as providing in embryonic form a model for the future. But at the worst, they may be merely diversionary, acting as a safety valve for those who otherwise would have fought side-by-side against the dominant force in our society — the large, multinational corporations. There is also the distinct danger that, in a temporary sense, some of the larger multinational corporations such as IBM and ICI may be able, through so-called 'worker participation', to incorporate parts of the trade union movement into their management structure. This may be formed a dangerous axis, consisting of incorporated trade unionists and the multinationals acting against the public interest at large. In these circumstances, the fight against 'worker participation' and an exposure of the assumptions on which it is built will take on growing significance during the coming years.

### Concorde and Hypothermia Coexist

Of major significance will be the growing gap that will exist between that which technology could provide for society and that which it actually does provide. Workers in advanced industries may during the day be engaged in the production of equipment for a system as complex and sophisticated as Concorde, yet in the evening may go home through communities where old age pensioners are dying of hypothermia from lack of something as simple as a paraffin heater. A significant campaign point will therefore be one which links the dual role of human beings — that of producers and consumers — and ends the absurd situation in which there appear to be two types of people: those who work in factories, offices and schools; and those who live in houses.

The Lucas workers initiative has raised in a very direct way many of these issues and it is extremely important that the same kind of initiative is now being taken up by workers at Parsons, Scraggs,

Chrysler and elsewhere. The campaign for the right to work on socially useful products is significant in that it means products are viewed for their *use* value rather than for their *exchange* value. It has raised also, in very specific terms, whether society can go on basing its future on ever-increasing consumption. But the questioning of such consumerism will have to take place within an entirely new political framework. It simply is not on for well-heeled middle-class intellectuals to go round lecturing the working class on the need to consume less. (Cases of rickets still occasionally occur among working class children.) The working class are not prepared to see such sacrifices as have to be made being made solely by themselves. For the first time a real debate is taking place amongst industrial workers about the non-viability of those strategies based on an unlimited increase in production and consumption of energy and natural resources.

In this connection, there are likely to be sharp exchanges between the base of the trade union movement and its superstructure, which is still steeped for historical reasons in narrow economism and the notion that the more production there is, and the more investment in high-

belt in Surrey. It is usually the working class playground that will have pollution belched out upon it from local factories. Seldom will it be the middle-class golf course.

Workers do not stand to gain from the misuse of science and technology. They make no profit from the pollution of the rivers, the seas and the air. It is in their class interest to resist these things and it is vital that they should be involved. We will probably see a sharpening struggle on these issues and nobody should underestimate the viciousness with which the monopolies will react. The example of ITT in Chile should be an object-lesson for all. As the polarisation in our society becomes worse, these large monopolies will use technology in a repressive framework, firstly in the behaviour field but then in a direct physical sense if necessary. The only safeguard against this will be the involvement, in a non-manipulative fashion, of the mass of ordinary people. This will not be done by small elites, whether they be scientific or political, lecturing the working class on what to do. It can only be done by those who are willing to integrate closely with the working class in their struggles and to learn from them.

Scientists and technologists will gradually be subordinated to the computers and the processes which they themselves have devised.



capital industry, the better.

Of equal significance is the debate now taking place at the point of production about alternative means of producing socially-useful products. This in turn is stimulating an important debate about *real* democracy at the point of production — a form of labour process in which hand and brain would again be reunited and in which there would be real self-management. There is a growing questioning of the role of management *per se*. Increasingly it is recognised that it is not a skill or a profession or a craft, but a command relationship, a command relationship which will increasingly become unacceptable to dignified human beings.

### Workers Don't Profit from Pollution

The ecological crisis is likely to assume even greater political significance and it is important that it should not be seen as a middle class preserve. It is always the stream in which a worker does his bit of rough fishing that will be polluted: seldom if ever will it be the salmon stream in Scotland. It is always the working class community that will have a motorway running through it, not the stockbroker

It is frequently said that the working class do not understand these issues and that it is impossible to discuss it with them. This is the typical middle-class mistake of confusing linguistic ability with intelligence. Industrial workers, by hand and brain, are capable of producing all the real wealth we see about us.

### Mobilising the Masses

They are capable of designing and building power stations, trains, houses, and structures of all kinds. People who are that intelligent are also intelligent enough to understand these issues and if the academics and others have difficulty in communicating with them, then it is their fault, not the fault of the workers involved.

Somebody once said: "let your words be so direct and clear and simple that the ideas they represent flow as naturally in ordinary people's consciousness as the wind and the rain flows through the woods."

The major task, during the coming five years, will not be a narrow, disconnected analysis of the problems of science and technology but the mobilisation of the mass of ordinary people to do something about them.

Mike Cooley



Company turns wind into money! Is the Conservation Tools and Technology approach a stroke of genius, sound business sense, or the ultimate soft-sell? Or is it the forerunner of an alternative society? In the following interview Dave Smith asks Hugh Sharman how CTT are faring in the precarious world of alternative technology selling.



Hugh Sharman

## HUGH LOVES YA

**YOU TOOK OVER** Low Impact Technology (LIT) in 1974, and renamed it Conservation Tools and Technology (CTT), is that right?

Yes, that's right.

*Were you working at Termco before that?*

No, I was at Hersent Deep Sea Structures who are linked to Termco. I was also publishing *Resurgence*. I spent some months, I mean some years, planning an exit from the oil industry, and LIT gave me the possibility of seizing on something concrete.

*Did you choose LIT out of missionary zeal, or similar motives?*

Yes, I'm afraid I probably did, and now I see that as basically a cardinal error.

*How many people are employed by CTT, and is the number increasing or decreasing?*

At the moment there are about ten, including a number of part-time employees, and the number is pretty steady.

*What has been your turnover since CTT began?*

Sales for the first month, October 1974, were £180; in the next nine months, £40,000; and in the past twelve months, £180,000. With the possibility of turning over £4-600,000 next year. This is very much a growth area.

*Do you sell mainly to individuals or to companies, and in what price range?*

We are selling right across the board: smallest sales considerably less than one pound, largest sales of fourteen or fifteen thousand pounds. Customers include schools, farmers, and professional men.

*Are the largest sales to individuals?*

Yes, they all sell to fairly wealthy individuals, whether they are farmers or country house owners.

*How many of the Elektro wind generators did you sell last year?*

A dozen.

*And how many of the Winco Wincharger?*

I don't know how many sold last year, but we have sold a total of about a hundred and twenty.

*How many solar heaters for swimming pools have you installed?*

Five big systems in public schools, and fifteen smaller installations for individuals.

*Is there a market for the hydroelectricity generators?*

We have only installed one hydro-power-turbine-heat pump system in the last two years.

*Are woodstoves selling well?*

We have been selling two to three thousand pounds worth a month of the Tinlizzie and the Trolla.

*I was given some figures showing that the Tinlizzie cost about £20 to make, was sold to you for £40, and you then sold it for £65 [£50 wholesale, £65 retail, from David Macilwaine Write to 113 Warwick Avenue, London W9 2PP]. Is it reasonable to assume that you charge fifty per cent more than the price you pay to cover your costs?*

Oh yes, we could never operate our high overhead on anything less than a reasonable margin, which is about one-third of the selling price.

### High Prices and D-I-Y

*The hardware in your catalogue seems expensive. Would you agree with that?*

Yes, we're not at all happy that prices are as high as they are. But you have simply got to cover your overheads, and this we have been doing very, very poorly. We haven't made money despite the image that we are making heaps of money.

*Why do you not cater more for the do-it-yourself market which would reduce the prices?*

We would like to. But a proper do-it-yourself kit is not simply throwing together a bunch of mechanical and electrical parts into a box. It really requires an awful amount of thought, and therefore money, to put together a kit that will work when the do-it-yourself purchaser buys it. Within the next two months we are going to have a cheap (£250) do-it-yourself solar heating kit: solar collector, pump, controller, pre-heat tanks, etc.

*Is there no chance of people learning about technology as they put the kit together?*

If we were an educational trust we could afford to do that.

*Some of the smaller products at the end of your catalogue, such as the small flour grinders, and the newspaper log roller, seem gimmicky. Do you feel that they are practical?*

People want flour grinders and log rollers, so we give them flour grinders and log rollers.

*What sort of response have you had to the CTT catalogue?*

Mainly good, for instance, we sold eighty at the D-I-Y exhibition one Saturday in October. Some people think a pound's too much for a book the size of the catalogue. But we decided we could not lose as much on the catalogue as we did last year, when we sold 20,000 copies of the A5 catalogue at 35 pence a time, and we lost 15 pence on every one we did. We have produced what I think is the best handbook, albeit related to company products, that is on the market; though we are editing a new catalogue.

### Alternative Technology and Social Change

*Many people associate social change and alternative technology in their minds and consequently think that CTT should be working along alternative society lines. Is that a misconception?*

It would be a misconception to think that I have any social mission to accomplish inside CTT, apart from promoting renewable energy resources. We have the greatest difficulty trying to do that and keep our heads above water as it is. If we are going to try to effect the revolution, through CTT, we'd disappear plug, plug, plug, in five minutes flat.

*Do you think there is a side of alternative technology that will change society?*

If our technology works, then it will change society. But we have all our time cut out just making it work.

*Will AT re-inforce the social status quo, by putting off the financial squeeze on the rich for a number of years?*

I see rich individuals, and rich companies, as the only source of technological, and to a certain extent, social innovation, so I do not apologise for trading, at present, with the rich. We are in a field where innovation is essential. The whole nature of government is now, and will be increasingly so, wasteful, non-innovatory, deadening. I am a right winger, just in case you hadn't guessed.

*I did wonder if you were a Liberal.*

I might be a right-wing anarchist. I do not believe in government.



The sun is rising on the solar heating industry. As we move towards the 1980s, Britain's bright young entrepreneurs are preparing for a consumer boom in solar panels that could surpass the double glazing boom of the 70s and the central heating boom of the 60s. Yet according to their Society, the UK section of the International Solar Energy Society, the future of solar in Britain (only 10% of our needs by 2020) is about as lukewarm as the water from some of their panels.

Robert Vale probes the reasons for this strange pessimism.

# SUNNY SPELLS FORECAST

THE UK SECTION OF the International Solar Energy Society have produced an estimate of the contribution solar energy could make to UK energy demands. The 375 page report *Solar Energy; a U.K. Assessment* covers all aspects of solar energy, from meteorological data collection to advanced photochemical theory, and was completed by 39 people from universities, research establishments and industry. It is a very useful document for anyone interested in solar energy, although the price of £10 to non-members of the UK-ISES (the very high subscription to that august body probably ensures that Undercurrents readers fall into the non-member category) suggests that it is best obtained from the library.

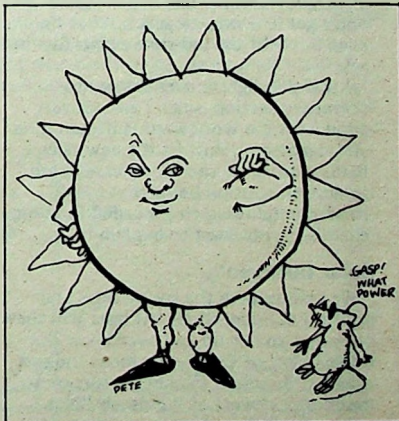
## Nothing New Under The Sun

The report begins with some fairly familiar figures on energy resources, their depletion rates, and cost rises of fuels relative to the cost of living. It calls into question the CEGB's figures on cost of nuclear generated electricity because it says these do not include the costs of military nuclear research programmes; social and environmental costs, which "might prove to be extremely high"; losses incurred by contractors in completing some of their nuclear contracts; and additional costs for delays and modifications to the Advanced Gas-Cooled Reactors. There is quite an interesting section on costing of solar (and presumably other 'free' energy) equipment which points out the unrealistic nature of the Treasury's 10% discount rate on which all government estimations of cost effectiveness are based, and says that "long life and inflation of competing fuel prices combine to make a strong argument for early investment". Following some figures on availability of solar energy in the UK — for example, assuming 10% conversion efficiency, which is not optimistic, 7.8% of UK land area could have supplied the total 1973 energy demand but they don't say whether it is primary energy or energy to final consumers — the first section comes to the eminently practical conclusion that

"the most acceptable way forward would be to use the roofs of buildings to collect and convert energy". (Gosh, what an amazing idea, why didn't we think of it?)

## Big Spenders

Following this look at energy resources the report shows what the USA, Japan and the EEC countries are doing in solar energy research. For instance the USA plans to produce 24% of its total energy demand from solar and wind power by 2020 (or 58% of its current demand) — but how will they find the other 76%? Japan intends to spend nearly £7000 million up to 2000 AD on 'Project Sunshine', which in spite of the name covers things like coal gasification as well as solar energy. France, that well-known nuclear enthusiast, spent £8.6 million on new energy sources in 1975; and Ireland, butt of many an unkind joke, is stated to have "played a key role in the development of the EEC programme". One hopes that this has caused a few red faces at the Department of Energy, but I doubt it.



Exactly the same situation was revealed at the International Wind Conference in Cambridge in September, when the UK government speaker, having heard of grand schemes for wind energy farms in Denmark and megawatt sized windmills under construction in the USA, said that Britain did not think wind energy was

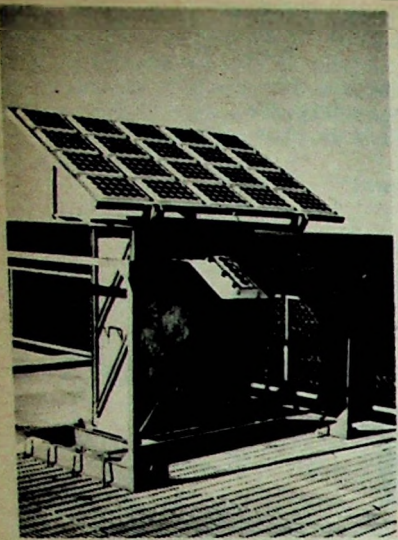
economic! Obviously our leaders prefer to spend our money on such economically sound projects as Concorde.

## Selective Absorbers

There is a lot in the report on meteorological data and its collection, and recommendations for improving the usefulness of this information for solar energy calculations and for wind energy. The following chapter covers the normal flat plate collector and its uses. It goes into detail on selective surfaces which it is estimated could improve collection in the UK from a single glazed panel by as much as 65 kWh/m<sup>2</sup>/annum, assuming of course that the cost of the selective coating can be reduced to the point where it costs less than the additional area of old-fashioned collector required to obtain those extra kilowatt hours. Costs are discussed at length and serve to prove what one had always believed — a do-it-yourself collector is far more cost effective than a bought one, which, at present prices, will need about 30 years to pay off compared to off-peak electricity, (this is a 4m<sup>2</sup> collector for domestic hot water). The general conclusion is that flat plate collectors for domestic use will have to become cheaper before they will seriously compete with conventional water heating systems; but it is demonstrated that the figures given by the Building Research Establishment in their report on energy conservation in buildings, are already out of date after only a year, so there is hope!

Various solar buildings in the UK and Europe are discussed but there is really too much emphasis on hardware and not enough on the less glamorous techniques such as passive solar collectors and insulation. I was amused by a call for the nationalised fuel industries to carry out research into the use of solar energy in conjunction with other fuels. If we follow this approach we could end up with the solar equivalent of those office buildings where heat is extracted from the light fittings but the building becomes so hot, most of the time, from excess lighting that it has to be cooled.





### Sunshine Selling

In a slightly repellent appendix to the section on solar energy and buildings there is a lot of emphasis on second homes, and "hard sell techniques" as used for double glazing and cavity fill. The whole thing is seen, I suppose not unnaturally, as a way of making money, with the solar panel joining the double garage and the fitted wardrobe as desirable features of one's new four-bedroomed executive home. The market is reckoned to grow to about 100,000 units per year, which is a lot of collectors, and at this rate 10% of the housing stock would have a solar installation for domestic hot water by the year 2000. The authors of this section also add that collectors won't appear on council houses until the councils can charge enough rent to recover the additional cost of the collector. The only conclusion one can draw is that if you want a collector and are not rich, then you must do-it-yourself. Why doesn't the UK-ISES supply DIY plans and suggest the testing of simple designs for home construction?

### Solar Cell vs. Breeder Reactor

The report goes on through various concentrating collectors, solar refrigerators and heat pumps. There is much talk of opening up overseas markets to UK manufacturers, but not much about helping the Third World countries to produce the things themselves. Solar cells are discussed at length and the situation is compared with the transistor industry, where prices fell by two orders of magnitude (i.e. 100 times) despite inflation. This section compares solar cell arrays with breeder reactors (!) and says that the fuel savings may outweigh considerations of immediate economic viability. At least the solar cells would not call for large shipments of plutonium around the country, and an armed solar police force. To put things in perspective, the UK government has spent £690,000 since 1960 on solar cell research (for space satellites), while in the USA the ERDA has allocated \$5.2 million for 1974 alone and aims to provide 8.2% of total US energy consumption with solar cells by 2020 AD.

### Waste Section

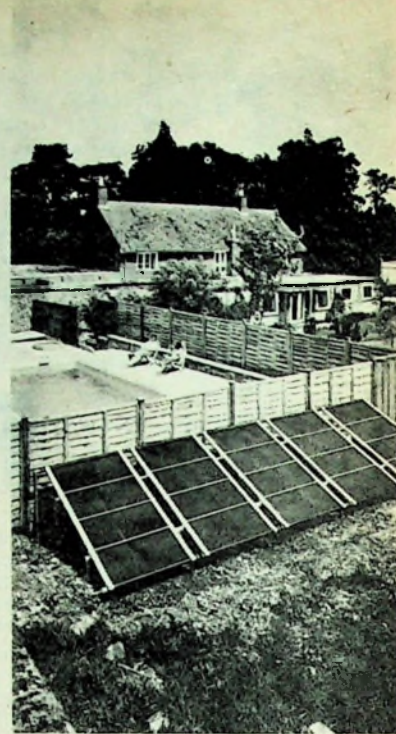
The section on plants and agriculture is quite reasonable when compared with much writing on food technology. For instance, the authors refer to protein extraction from leaves, but point out that this should only be done from waste material such as potato haulm (which could yield an annual 60,000 tonnes of protein), since "there is no point in extracting protein from plants that can be eaten by humans, as we would be adding yet another process which humans can do quite well themselves". Such remarks will not carry much weight with the firms who are busy spinning fake meat, or meat analogues as they prefer to call it, out of perfectly edible soya beans. There is talk of energy plantations and the like, growing hybrid poplars or some gloomy marsh grass fed on sewage. The technologists seem to prefer things simply and neatly packaged — why not fill the energy plantations with pigs and grow food as well as fuel?

This chapter is also about waste, methane and all those things, and I was slightly depressed by the bland way that government figures on domestic waste by the year 1980 are quoted, without the suggestion that some of this could be prevented by reducing packaging and other waste. There is something faintly ridiculous about taking wood to make paper which is then thrown away and turned into alcohol and acetone. Better to use the wood direct perhaps? Sadly the whole report is pervaded by this technical fix mentality. However, they do call for decentralised processing of wastes "at the farm and community level where the energy output could be directly used", and they tell us that 25 people could live off one hectare if they ate only potatoes — one tonne/head/year, or about six lbs/day! The eagerness of the authors for a bit of biological engineering is everywhere apparent, always ready to stick on some nitrogen fixing nodules, or fix up a useful symbiosis, one hopes that they don't get it wrong, or at least that they keep a few of the old-style plants just in case.

I will skip lightly over the photochemistry section, since I am not very good with the Woodward-Hoffman rules and signatropic shift (is it a new sales feature on American sports cars?), the general conclusion being that more fundamental research is needed in photochemistry, not least to explain it.

### Solar Insurgency

We end up with the social, legal and political considerations. At last! Will they call on us to rise up and overthrow the Department of Energy, or focus the sun with ten thousand pocket mirrors on to the topless towers of Windscale? Not a chance, all they do is tell us that solar energy is natural, endless and free; suggest that there ought to be a law to stop someone blocking off your collector with another building, and Tax Incentives for installers of solar collectors; and add rather threateningly, "energy industries have become a significant target for industrial strikes and civil action".



Five Suncell Oasis panels provide solar heating for this private swimming pool in Hampshire.

It is good to know that the UK government is spending less than £½ million per year on solar energy research, all being done in dribs and drabs with no-one knowing what is going on. There is no national programme and presumably it is hoped either that these solar energy people will go away, or that someone will emerge from their garden shed with a major breakthrough. The UK-ISES suggest spending £20 million per year (compared with the UKAEA's £84 million in 1975-1976), to produce about 10% of UK energy demands from solar energy by 2020 AD.

### Time to See The Light

This is not a bad report really, it would be naïve to expect a body like the UK-ISES to call for radical change, but I would like to have seen two things in it. Firstly, I would have welcomed more emphasis on reducing energy demands through avoidance of waste, rather than the blind acceptance of growth in demand. The more these figures for future demands are accepted, the more the planners will come to believe in them and plan for them; and change, which will have to come in the end, will be that much more painful. Secondly, I think a body is needed (why not call it the UK Alternative Energy Authority?) which will put the case for all forms of ambient energy at once, in an organised package covering everything from Salter's rocking ducks to insulated window shutters.

Robert Vale



# CAN'T GET NO JOB SATISFACTION

The alternative technology movement has come a long way since those heady days when building windmills, solar collectors and eco-houses was our main preoccupation. Most of us soon realised that the benefits of all our small, beautiful eco-hardware would be enjoyed only by a minority if the factories which produced the bits remained dangerous, polluting, alienating and exploitative.

The battle for AT hardware has largely been won. The rising sales of windmills, wood stoves, solar collectors and similar 'conservation tools' are ample evidence of that. But the battle for alternative, 'liberatory' modes of production, a long-running campaign waged by radicals ever since exploitation began, is far from over. Dave Elliott takes a look at two recent battle-grounds — job enrichment, and workers' co-operatives.

IN A CAPITALIST society, production technology reflects the values and priorities of capitalism. It is usually designed not only to ensure the most effective extraction of 'surplus value' from the workforce, but also to guarantee the stability of this exploitation by minimising the freedom of the worker.

Thus technology is often designed specifically to *control* the work — to ensure that work pace is maintained, independent discretion reduced and discipline maintained. Lest this should seem an extreme view it is worth quoting a few fairly typical job designers:

W. Tipping in his book *An Introduction to Mechanical Assembly* (1969) argues that engineers should

"... continue with the use of machinery to ensure that the human staff do not slip back into their ways before they had machines. This can easily happen, and the best insurance against it is to continue (product) designing to suit machinery."

So skills and independent action must give way to ensure good managerial control. As R. Jenkins and E. Desmond put it:

"... in examining suitable projects for automatic assembly we have lately come to the conclusion that operations requiring skill should be given the first priority. They are always bottlenecks of production, cost and quality."  
(*Electrical and Electronics Manufacturing* 12, 1968)

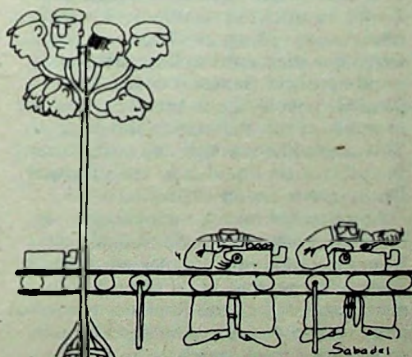
So much for the idea of automation liberating workers. Rather than being used to do away with unpleasant, boring work, and instead of freeing workers for more creative jobs, automation is often used to *replace* skill, and to create more low-skilled jobs — jobs which can be done by workers who are paid less, less likely to be organised and easily replaceable.

Clearly, it would be possible to reverse this tendency and use automation as a tool for liberation. We *could* move to a form of production based on small-scale automated units producing the basic components coupled, say, with labour-

intensive high-skilled assembly work, in small units operating to meet local needs. The technological options are myriad. As Gray has written ('Economic Concentration' evidence presented to US Congress Sub-committee on Anti-Trust and Monopoly 1955, Part 3):

"... technology is increasingly susceptible of variation, adaption and differentiation; instead of binding man to fixed patterns of organisation, as the determinists allege, it is potentially capable of expanding his freedom ... man can arrange a great many combinations of technology and select from the available alternatives such combinations of technology and select from the available alternatives such combinations as will produce the kind of society he desires."

But while there are many technical options already available — for example, small-scale computer-controlled machine tools, using easy-to-change patchboard controls — the real question is how to ensure that they are *adopted*, given the fact that the logic of the existing socioeconomic system demands exactly the



opposite, namely large-scale, hierarchical, alienating and exploitative technologies. Clearly this is not really a technical problem — although there is a need to

widen and deepen the range of alternatives available. It is a problem of political implementation.

## Workers' Responses

Trade unionists have consistently fought against the introduction of de-skilling technologies, and have often been portrayed as anti-progressive Luddites for so doing. But until recently, there have been few alternatives to simply *opposing* the introduction of machines. But the Lucas Aerospace workers have shown that there

that more positive approaches are possible. Apart from campaigning for alternative products, they are also fighting for new production *methods*, and are particularly keen to develop organisational arrangements

"... in which the skill and ability of (our) manual and staff workers is continuously used in closely integrated production teams, where all the experience and common sense of the shop floor workers would be directly linked to the scientific knowledge of the technical staff. This would be done on a much more equal basis than is now the case, and would give rise to much greater job satisfaction."

Of course ideas like these — for 'project teams' made up of all grades of workers — are likely to come up against considerable resistance from skilled workers wishing to maintain the traditional skill and job demarcations. These have grown up as protective devices in the face of management's attempts to de-skill workers, and cannot lightly be discarded. However, some of these problems can be circumvented by adopting vastly improved 'employee development programmes' to break down — or rather, *level up* — some of the divisions between production workers, technical and clerical staff which have been carefully nurtured by management over the years. The Lucas Workers' Corporate Plan consequently calls for extensive re-training schemes for both blue and white collar workers.

As well as demanding improved training and work organisation, the Plan discusses the types of automation that could be introduced. Rather than devising machines that replace workers, the Combine are keen to explore systems which enhance the skills of the workforce, such as 'telecheric' machines — remotely controlled devices which mimic the motions of workers operating at a safe distance from dangerous environments. Their aim is to choose production technologies which *expand* the workers' role and *increase* their control over the work process, rather than reducing them to mere appendages to some meaningless process. Obviously it is difficult, and undesirable, to prescribe in the abstract the precise nature of the machines that could be developed. They will have to emerge 'organically' out of the process of political struggle — a process which will *shape* the technology.

## Regaining Control by Sharing It

Management is also interested in exploring alternatives — for managers are



well aware that existing patterns of work organisation and technology may be 'less than optimal'.

As the French Employers Federation recently asked themselves:

"Has no one ever weighted . . . the minutes or seconds gained by a fragmented work-system against the cost of re-touching, botched work and strikes . . . incidents, accidents, absenteeism and labour turnover, not to mention the consequences of a lack of job satisfaction?"

Clearly management are mainly concerned with increasing productivity — and profits — but they have begun to ask fairly fundamental questions about the logic of fragmented work. This is why we have heard so much about 'job enrichment' over the last few years. Managers have begun to see that relentless job fragmentation and work pacing is counter productive, and that they should seek to take a wider 'systems view' of their organisations as a whole. This sort of thinking is partly a response to the problems of absenteeism, labour turnover and unrest. Managers are seeking to smooth out these unfortunate anomalies, and re-establish control. To do this they are even willing, tactically, to relinquish some elements of control over the work process itself — 'regaining control by sharing it' as one management expert has put it.

There are some lessons to learn from these experiments. One is that marginal changes (such as 'job enlargement') which tie two boring jobs together into a supposedly-meaningful 'new' job are unlikely to lead to any real satisfaction. The usual result is simply increased production and quality — particularly if the worker's job is 'enriched' by making the worker responsible for inspection and quality control. So workers tend to see 'job enrichment' as simply a form of productivity deal and have demanded extra pay — or have opposed it.

Job enrichment has also been used as a way

"to make workers compliant, deferential, seduce them away from trade unionism and from the pursuit of their interests where these are in conflict with the interests of management." ('Changing Hierarchies at Work' *The Listener*, September 1972)

As Herzberg has put it, the fundamental aim is to offer

"more latitude . . . to individuals to develop their own ways of achieving the ends that are presented to them by a centralized authority." (*The Motivation to Work* — Wiley 1959).

But job enrichment, participation through autonomous work groups and all the other management devices may raise more problems for managers than they solve.

As Bill Daniel has written "when workers gain a greater say in decisions, when they gain more power, it creates an appetite for even more, rather than gratitude for what they have achieved." ('Changing Hierarchies at Work', *The Listener*, 7 Sept. 1972).

### Socialist Job Enrichment

The point of all this is not that 'participation' or job enrichment as concepts are totally bereft of value, but simply to point out that, so far, most schemes have been designed by management experts in the interests of 'productivity'. In a socialist society, of course, there will be an even greater need for careful attention to job design — as part of the wider restructuring of social relations. Will the current theories of job satisfaction and motivation be of any use? Most are based on assumptions about human nature that reflect a desire to keep things very much as they are. Nevertheless, there is a huge volume of data on the 'ergonomics' and 'socio-dynamics' of man-machine relations — 'socio-technic' theory and all the rest. Some of the conclusions for example that work groups function well if they can 'see' and influence the whole work process (a phenomena known as 'closure') — would seem pretty obvious to anyone with any experience of alienated work or to anyone who has read Marx.

## SOFT SOAP

In *Undercurrents* 12 an article on *Community Technology*, written by Karl Hess, outlined the attempt by a group of AT activists, in a poor area of Washington, to develop fish farming, solar energy and local craft skills. Since then Hess has left to experiment with self-sufficiency on a farm. There followed a shift in philosophy — for, it was argued, solar collectors were not directly relevant to the local ghetto population, whose problems were those of the poor working class anywhere: unemployment, health, education, food and shelter. And, as Jeff Woodside put it: "*Community Technology* wasn't able to support itself. Before you can do any community development, you must have an economic base."

So the remaining group decided to try to set up such an economically viable, alternative, industrial base. Consequently the fish tanks have been dismantled, and the solar devices pushed aside to make way for a small-scale factory, launched with \$1500 start-up money loaned by friends, making soap. Why soap? Well, it's fairly easy to produce in small batches, and the process can be made ecologically sound by using natural ingredients.

The *Community Soap Factory* produces two types of bio-degradable liquid soap — a basic *Just Plain Soap* and a peppermint variety. Ingredients: coconut oil, olive oil and potassium hydroxide, are bought in bulk and reacted together at 90°C in a 90 gallon vat. After 24 hours cooling the resultant soap is sold in various sizes of plastic bottles — with labels printed on recycled paper.

Plastic bottles were chosen because they are safer to use in bathrooms and less expensive than glass. The group hopes, eventually, to move away from non biodegradable bottles by supplying shops in bulk and asking people to bring and fill their own containers. They also want to develop other products such as bar soap — packed in recyclable paper — a shampoo, laundry soap and an all purpose cleaner.

They sell through a network of food co-ops and to a lesser extent 'commercial' health food shops, mostly in the immediate area, but also in cities like Boston. Even though they don't advertise, orders are now coming in from as far off as British Columbia and Los Angeles. They hire trucks to distribute, but are not keen on expanding sales beyond a certain size, since they want to keep small and avoid excessive transport costs. One possibility would be to break up into two or more units if the market should grow. This seems likely as they are undercutting the other main liquid soap manufacturer, Dr. Bronners, by up to 50%.

At present there are three more or less full time workers, plus occasional visits from local kids who are offered some pay. The core group has survived on government food stamps and freelance work, but hopes that the factory will soon be able to provide a small salary.

### Visionary Workshop

The *Community Soap Factory* is housed in a warehouse at the back of a local health centre. It has attracted some

local support, and the group are also involved in other community-oriented projects — including screen printing and urban allotments. 'City gardening', as the latter activity is called, seems fairly uncommon in the U.S. Their Workshop has quite a range of equipment — lathes, drills and hand tools — all looking very much like they ought to be the foundation for the sort of *Community Workshop* that Cliff Harper depicted in *Radical Technology*.

They hope to provide people with "quality, bio-degradable soap products" at the lowest possible price, thus lessening "our overall dependence on large scale and largely unresponsive, corporate capitalist business". If they make a profit, over and above what they need to survive, they'll plough it back into other non-profit businesses in the neighbourhood, and develop a wider range of self-help projects with the local people.

The idea of 'worker control' is central to their thinking, "for worker control means that each individual has an equal voice in setting policy for their workplace." Also, "the scale of the enterprise is very important . . . because direct democracy is most effective in small groups of people. We plan to remain small . . ."

They hope that "many more small-scale, anti-profit, community-oriented, worker collectives will develop around the country, particularly in the areas of manufacturing and the production of basic goods", since, in this way, "we can begin to get the means of production under democratic control and demonstrate that real alternatives to the existing capitalist structure are possible."

Dave Elliott



Some of the bourgeois 'job designers' seem to have spent the last couple of decades re-discovering what Marx wrote and what any skilled worker could tell them, and turning it into complex jargon to impress management and earn themselves consultancy fees.

Although job enrichment has passed from being a new, perhaps threatening, idea to being the 'conventional wisdom', it is important to realise that the extent of its actual application is fairly small. There have been very few experiments in Britain — and even the pioneering efforts by Philips have been discontinued. The idea appealed to some managers during boom periods when they were looking for a new way to motivate workers and distract them from wage demands: but during a recession, the threat of unemployment provides a much simpler way to discipline the labour force. Moreover, most of the schemes have been limited to small changes in task-allocation, with negligible modifications to the technology.

There have been exceptions — for example the much-quoted experimental Volvo plant at Kaldor in Sweden, a vast new factory based on small group assembly. The conveyor belt is replaced by a series of motorised trolleys whose pace is controlled by the workers, within certain limits. A part-assembled car moves on the trolley into an assembly bay and a computer synchronises the allocation of parts to a team of assemblers. When completed, the job moves to the next bay. The workers have some degree of control over their pace of work and the system seems to combine the advantages of synchronised flow with local autonomy. But the degree of autonomy is fixed, as is the overall aim of the process — to make cars for profit. As one Swedish trade union spokesman put it:

"Changes in favour of the employees are only acceptable as far as the company will stay competitive, and it seems that the mandate one has to introduce new methods is only good as long as profit can be ensured."

Whether such experiment will be taken up more widely seems doubtful. Volvo operates at the relatively small-batch, luxury end of the car market. The big mass-producers — like Ford and General Motors — are unlikely to take up the idea.

Moreover, as one ICI worker put it: "You have to have a good wage before you can worry about job satisfaction."

Clearly then, job enrichment experiments in existing industry are fraught with many problems, but open up a whole new area for collective bargaining. Progress will be slow and will have to be fought for. It is very much a 'transitional' struggle — like the Lucas Campaign — linked to the ongoing power battle on the shop floor and to the fight to introduce the elements of industrial democracy into corporate planning.

### Workers Co-operatives

Utopian alternativists often pin their hopes on workers' co-operatives in the hope that, given the freedom from managerial control supposedly existing in these firms, there should be more room

for experiment. But there are few examples of co-ops experimenting with radically new products or methods of work. Although common ownership can reduce some of the divisions with the firm, and although decision-making may be somewhat more participative, most co-ops seem very tightly constrained by the market. They usually operate (like Scott-Bader) in the 'gaps' left in the market by the big monopolies, and this fact tends to determine the product, the nature of the production technology and even the structure of management. Some smaller co-ops have been more inventive, but they are usually forced to 'play the market' as entrepreneurs — there is little hope of 'producing for need'. True, co-ops can consciously avoid involvement with socially undesirable work (such as armaments). And some profits can be

economy can be ignored. We need rather to find ways to challenge and change it. To some extent small co-ops can act as demonstrations of 'what could be', but it seems unlikely that, given the market constraints, they can develop work patterns and technology that will have any meaning for the bulk of workers at present. Their emphasis on craft work and fairly primitive technology may (or may not) be appropriate for the future, but means very little to contemporary workers in the mainstream of industry.

Another approach is to accept government money and set up experiments to some extent 'outside' the market system. Obviously there are dangers with this approach but some workers co-operatives have started this way — or else through funds from philanthropic organisations — and there is hope that government funds



The occupation of the factory in 1974 to establish workers control. Meriden Motorcycles illustrates some of the difficulties of state financed co-operatives. They were recently in the news again because they needed a government loan to buy the marketing rights of the Triumph-Bonneville motorcycle which they make, and to end the agreement whereby they are merely sub-contractors effectively controlled by Triumph.

allocated to social projects and welfare services — but then the big monopolies can do this on an even larger scale as part of their 'social responsibility' façade. Furthermore the big profitable firms also seem more able to afford to experiment with (albeit limited) work restructuring projects...

Co-ops on the fringe of the economy, less concerned with economic viability and more with internal and external social relations, can perhaps be more creative — but they are nearly always unstable and transitory. Many survive only by exploiting the goodwill of the participants (and customers) through voluntary work or low wages. Of course, in the society we are trying to create this would no doubt be the preferred orientation to work. But for the moment it is difficult — and perhaps even divisive — to pretend that the 'larger society' and its

for co-ops will eventually be available on a wider scale. There are also a number of 'community workshops' funded by local authorities which could form the lift off point for local community enterprises. These may be a good place to try to explore new products that meet local needs and new methods of production. Whether it would be possible to set up fully fledged workers co-ops/community enterprises on this basis remains to be seen but the potential is there. Certainly there is encouraging evidence from America, where more than 100 both non-profit and profit Community Development Corporations are supported (to the tune of \$120m) by the government. As Barry Stein has written in such Community Enterprises

"one can take advantage of the basic materials and products produced by large firms as commodities, which are



more nearly cost-effective than differentiated final products. These in turn, can be modified or finished in whatever way is appropriate to the local market; bulk industrial chemicals can be mixed and packaged for household and/or agricultural needs; steel strip can be cut, painted, and assembled into venetian blinds; or bolts of fabric can be cut, dyed and sewn for a multitude of purposes. This is not a matter of cottage industries; significant enterprises can be generated in these and similar areas, employing anywhere up to a hundred or so, taking full advantage of modern technology and industrial organisation, and producing for the community's needs." (*Size, Efficiency and Community Enterprise*, B. Stein, 1974)

This approach opens up the possibility of direct local self-help action — locate a specific need — say for cheap insulation, energy generation or, transport — and then devise a simple product to meet it, and an appropriate method of production. Ideas mooted in connection with the Community Workshops in Milton Keynes, for example, include electric vehicles (even bicycles), wood stoves and solar collectors. Cheap furniture production and renovation workshops is another possibility. The potential is considerable given the large number of unemployed people who could bring their skills and their ideas of what is needed into play.

Another possible lift off point is recycling, renovation and repair — a classic 'craft' industry, well suited to skill-intensive local operations in small workshops. Most consumer 'durables' — radios, irons, TVs and of course cars — given the prevalence of 'planned obsolescence', require frequent maintenance, refurbishing and repair. Materials-recycling could also form the basis of a small community enterprise.

Given ever-increasing fuel costs, local workshops and services will become more viable economically. At first, these projects will inevitably, like workers co-ops formed from existing (collapsing) firms, be somewhat marginal in terms of the numbers employed and will certainly initially require outside cash support. But the potential for a considerable degree of community self-sufficiency is there. Total self-sufficiency, even if possible, would probably be undesirable. Some regional specialisation is inevitable and in any case some trading would help avoid excessive isolation. It is a matter of balance: no area should survive totally by export, without paying attention to production for local needs; but neither should the opportunity for the intelligent utilisation of unevenly distributed material, energy or human resources be ignored.

Hopefully, all these various experiments and struggles both inside conventional industry and on the fringe will interact. But it's a vast project. There is no one way forward and no one 'alternative mode of production'.

For further discussion of Community Enterprise projects see the excellent *Size, Efficiency and Community Enterprise* by Barry Stein (Center for Community Economic Development, Cambridge, Massachusetts, 1974).

# NEASDEN BOND

The importance of paper to the functioning of our society is often overlooked; but imagine the consequences of a sudden severe disruption in its supply. As a material we cannot easily do without, it is necessary, therefore, to consider the production and use of paper in any analysis or discussion of social, economic, political and technological change. Paper was made by hand until recently, and a monotonous task it was too. While it is still possible to make it by hand, it is a labour of love. However, there are now several ways in which paper could be made on a slightly larger scale by small co-operatives — with inexpensive machinery doing much of the boring work. In the following article Chris Thomas examines the reasons for such an approach, and looks at the available equipment.

MUCH ATTENTION has been given to the environmental impact of paper production, expressing considerable anxiety over the effects of its continuing expansion. The ecological consequences of destroying large areas of natural forests and replacing them with commercial forest monocultures; the pollution created by pulp and paper production; paper's high energy consumption (over one tonne of coal equivalent for every tonne of paper); and water demand (around 20,000 gallons required for every tonne of paper); all create cause for concern.

To minimise environmental degradation, the most obvious move would be to cut out wasteful and unnecessary uses of paper. For that paper which is needed, a greater emphasis on recycling waste papers would help. Recycling reduces the consumption of trees for a given demand for paper and cuts down the energy consumption (by around fifty per cent) and pollution created by its manufacture. The development of 'alternative' or 'low-impact' technologies for producing paper will need to keep these points in mind. Emphasis should therefore lie on the desirability of the product, maximising the recycling of waste paper, and maintaining an equilibrium between the growth and consumption of forests, or other fibre sources available.

Equally important is the mode of production and its control. In Britain just under half of our paper is imported from integrated pulp and paper mills

sites near the forests they feed on. The other four million or so tonnes were produced in Britain by 180 Paper and Board Mills. In 1963 almost the same quantity was produced by 267 mills. Since 1965 employment in the Paper Industry has dropped by one third. The industry has followed a policy of rationalisation: centering production on larger and more capital intensive units. A new paper making machine may cost £5-£15 million, ensuring further concentration of control over production. In 1970, 60% of the paper produced in Britain was by the five largest companies.

## The Economies of Small Scale

This trend may, however, already be beginning to change, as far as the size of production units go. Rumour has it that thinking in some sectors of the paper industry is already moving towards considerably smaller production units than those with about 300 tonnes per day (tpd) capacity, which have been favoured in recent years. Diseconomies of scale have manifested themselves in a number of ways: from an engineering point of view, increasing efficiency is not being realised; the inflexibility of large plants creates inefficiencies in trying to match production to sales in a fluctuating market; increasing transport costs have reduced the economic radius of distribution and have increased raw material costs.

A larger number of smaller production units would provide greater operating efficiency and flexibility;





thus suiting the market better, particularly where waste paper use is concerned, as this is a widely dispersed source of raw material. Krafft in Germany have recently developed a paper making machine operating in the 20/70 tpd range. Installations so far have been for recycling waste in production of packaging paper, however it is not limited to these products.

### Learning from the Third World

Other 'smaller' paper-making machinery has been developed — as appropriate technology for Third World countries. A plant which produces 12 tpd is operating in India; The Intermediate Technology Development Group have designed a Pulp Packaging Unit that can produce egg boxes, seed trays, even insulating ceiling tiles, on an output level of less than 1 tpd; and ITDG were also working with Allan W. Berry Ltd (a paper-making machinery manufacturer) on a project to produce a flexible paper-making plant capable of producing low-grade writing and printing papers, as well as packaging grades from waste paper. This latter plant was envisaged to have a working capacity of 5-12 tpd. Unfortunately Allan W. Berry have now gone out of business.

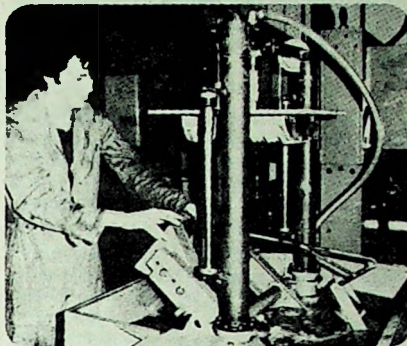
But what about the economics? Capital investment for these small plants varies from about £30,000 upwards. Running costs are hard to come by, but certainly the German plants are designed to be competitive in 'Western' markets. Development Techniques (associated with ITDG) have performed an economic analysis on their Pulp Packaging Unit in the UK and found that it could produce egg boxes cheaper than Hartman Fibres Ltd, the major producer churning out around 1½ million per day. Rather than transporting waste paper to, and egg boxes from East Anglia for the whole country, small production units sited near egg producers, and collecting local supplies of waste as a raw material make considerable sense.

The type of production of paper described above may not fulfill the criteria of a radical technology as yet, but it offers the potential. The unit size is manageable, employing between 6 and 60, or more; and changes in the organisation of work, and further attention to the environmental impact of production and the products produced, could realise it. Whether the optimum size of production necessitates this level of technology, or whether it would be more desirable to produce paper on a local workshop basis is a question to be explored.

### Heavy Going by Hand

Paper could be produced at a workshop level in a number of ways. On the smallest scale paper can be made by an individual using a simple method (see insert). Hand-making of paper has recently received a revival of interest as a craft, hobby, or educational 'toy'. The method is simple but time consuming. There

are a number of improvisations that could improve the pulping stage, such as using an old washing machine, a dough-mixer, or the innards of an old spin-dryer. But even having to form every sheet by hand with the mould and deckle would make producing a community newsheet, for example, a rather laborious task. Commercial mills do still operate producing hand-made sheets of paper, using mechanised pulp production and drying. However, their product, generally very high quality art papers, is very expensive.



**This ITDG machine can be used to make egg trays, seedling pots, soft fruit packaging, disposable medical utensils, etc. from waste paper**

Mechanising the sheet forming process comes next. Historically paper-making progressed, after seventeen hundred years of making paper by hand, to mechanical production with the development of the Fourdinnier paper machine. Modern 'monsters' many times the size of the original, and operating many times faster, still bear the name Fourdinnier and work to the same principles. The pulp in solution (about 99 per cent water) instead of being scooped up by the mould and deckle to form a sheet of paper, is poured onto a continuous wire. Water drains from the wire leaving a mess of fibres which is picked up by a continuous felt or cloth belt pressing against the wire, and transferred, through a rotary press, to a series of rollers, some of them heated, known as the drying chamber. When it emerges from the machine the paper is reeled up. A technology simple in principle, although much refined to improve efficiency and quality in modern paper-making machinery, it should be amenable to the development of a small, simple, low-cost process.

### A Practical Method

Antony Hopkinson thought so too, and set about trying it; he has built a prototype model, making a continuous sheet about twenty cm wide. The system isn't perfected, particularly the drying process. However, the principle is demonstrated. He is now building a slightly larger model to produce a roll 60 cm wide, enough to make a reasonably large sheet of drawing paper at a local school, as a class project for

a group of fifteen year olds. The prototype looks very Heath Robinson, being built mainly from scrap components. Pulp is fed from the vat (currently a bucket), to the head-box where it is continuously stirred to ensure an even consistency. From here it overflows onto a wire carried by a series of rollers adapted from a conveyor system, as is the cloth belt. The rollers are driven by an old washing machine engine geared down using parts from a bicycle. Water drips from the wire into a tub below to be recycled for further pulping. When on the cloth belt the wet paper is passed between pairs of rollers to expel more water and to smooth the surface. The paper is still wet when it emerges and is reeled up so that at present it has to be unreeling, when removed from the machine, and hung from rafters to 'loft-dry'.

Antony Hopkinson calculates that his machine should produce writing and drawing paper for 1,000 pupils in 3-4 hours per week. A poor return on labour involved in commercial terms perhaps, but a viable proposition for a community workshop?

### A French Method

Another example of a self-built paper machine comes from France, and turns locally collected waste paper into a packaging paper used by local farmers as linings for their fruit boxes. Once a hand-made paper mill, it was converted by the mill-owner and now operates commercially with an output of only 0.8 tonnes/week. The paper machine is coupled to a Hollander beater (to provide the pulp) and produces a roll of paper about 75 cm wide from waste newspaper and magazines. The rolls are cut into blocks of sheets whilst still wet, and the sheets are then hoisted by a lift into the attic to be air dried. Power is provided by a water wheel, both for the mechanical work and for electricity generation.

All these experiments in producing paper on a small scale, whether on an individual, workshop, or factory basis, raise as many questions as they answer. However, they do indicate that a certain flexibility already exists in paper making technology, giving the opportunity to develop alternative modes of paper production.

Chris Thomas

### REFERENCES

There is a considerable amount of information available on how to make paper, specifically on simple hand-made methods:

*Making Paper*, Ginn & Co 55p, Practical Science Projects.

*Make Your Own Paper*, Dryad Press, 178 Kensington High St, W8, 45p.

*Paper: Rolling Your Own*, Derek Burns in Radical Technology, Wildwood House, £3.25.

*Home-Made Paper*, Michael Allaby, New Scientist, 23 Sept 1976.

Also general paper-making and paper science textbooks offer considerable information on raw materials, pulping techniques, sizing, fillers and pigments.



# AIR FARCE

Will the fare offered by the TV and radio networks of the 1980s be More Of The Same, or Something Completely Different? A lot depends on the soon-to-be-published recommendations of Lord Annan and his worthy colleagues.

But the bureaucratic Annan approach to communications policy, says John Howkins, is totally unsuited to a world where "communications technologies are flooding policy-makers with options which they do not understand; amongst which they must choose; and which will have profound effects on society".

VERY SOON the Annan Committee on the Future of Broadcasting will publish its long-awaited report. The publication will mark the beginning of the last lap of a tortuous and frustrating relay race that began back in 1970 and will not end until 1979. The sport in question is nothing less than the use of the power of communications — and specifically, the power of mass broadcasting — a sport which started in the 1920s, is now worldwide, and will continue forever.

The last event on the same scale as the Annan Committee was the Pilkington Committee of 1960 which—broadly—supported Sir Hugh Greene's vision of the BBC, gently criticised ITV, and proposed the spare third channel should go to the BBC.

Towards the end of the sixties, however, a whole new range of issues and questions began to dog the hitherto widely-admired principles and standards of professional, centralist, consensual broadcasting. The change was not restricted to the United Kingdom. Worldwide, the principles and ideals on which societies had established their different broadcasting institutions and practices began to suffer a deep malaise. There were two obvious symptoms.

The first was money. Inflation was increasing the organisations' costs at the same time as advertising expenditure was being reduced. And the fact that virtually every household in the industrial countries now had a TV set meant that licence revenue had reached a peak. The other major symptom was the perennial one of the uneasy relationship between broadcasters and politicians, which sometimes came to dominate the entire discussions.

But there were many other issues, harder to tease out, but no less significant.

In the UK, the controversy over the power of broadcasting centred around the Labour Party and the demand of the technicians trade union ACTT for "access, accountability and participation"; around the politically sensitive idea of balance in programmes; and around ITV's ambitions to get the fourth channel, which would enable it to compete more effectively with the BBC's two channels.

Both major political parties, however, were ignorant and chary of professional broadcasting — a persuasive recipe for inaction. It was not until 1970 — ten

years after Pilkington, a period which was felt to be somehow appropriate, but was in fact arbitrary — that the Labour Government set up a Committee of Inquiry into the Future of Broadcasting and asked Lord Annan, Provost of University College, London, to chair it. Almost immediately Labour lost power and the incoming Tories, who were even less eager to intervene into broadcasting than Labour, aborted the proposal. Annan, however, was re-instated after the next swing at the national polls and since Spring 1974 his Committee of a few of the Great and the Good (Whitehall's list of underemployed public eminences) and a few of the Ordinary and Grey have been tackling the question of the future of broadcasting — or, more exactly, the future uses of the power of broadcasting.

By February 1976 (according to one of the three members who knew something about broadcasting) the Committee had reached the point where everyone had accumulated a basic knowledge of the subject and knew the political rules of the game. Earlier, the Committee had made not a few gaffes and broadcasters had made suitable noises in reply. One member had astonished the staff of a commercial sound radio station by asking to see the newsroom's video link to ITN.

The report is now finished (Lord Annan read the proofs in early December) and will soon be published.

Its findings are likely to revolve around six issues:

- the bureaucratic organisation and the financing by licence fee of the BBC

- the allocation of the fourth television channel and, less immediately, of the two more TV channels that will become available in the 1980s
- the need to accommodate more access and a greater number of independent outside productions
- the question of competition and collaboration between the BBC and ITV
- the question of the overall public control and accountability of broadcasting organisations, and the parallel question of an independent body to deal with research and complaints and, as a corollary,
- the desirability of a permanent body to replace lumbering bodies like the Pilkington and Annan Committees.

On this last point hangs the significance of the entire process of analysing and making policy about broadcasting power.

## Is Annan Irrelevant?

The Annan Committee is not irrelevant because it is an integral and potent part of the Government's current policy-making process. But it is misguided, and the policy-process that gives it potency is also misguided.

The Government's appointment of the Committee is not quite like fiddling while Rome burns but it is certainly the intellectual equivalent of placing a violin under the chin after the Visigoths have lit the first match.

The appointment is based on a number of assumptions:

- that broadcasting is a self-contained activity
- which can be analysed, understood, and judged on a twenty-year timescale
- by a group of part-time, unpaid and politically conflicting individuals most of whom have had no experience and no interest in broadcasting, let alone in the intricate maze of broadcasting politics
- who will report to a Government that has no Minister of Communications and no expert or advisory communication

Cameraman from Milton Keynes 'Channel 40' Community Cable TV service, run by the Co-Ax (Community Access — get it?) group, lines up a shot.





tion institution, panel or council.

These assumptions might make sense in a world where mass communications was a self-contained, self-referential activity (factually not the case, and theoretically almost certainly impossible), where the public were generally content with the matter being discussed, and where the rate of social, technological, legal and moral innovation was somewhat slower than that of a sleepwalking tortoise.

The facts are otherwise.

We must recognise that communication is a basic social constituent of *process* — both individual and social — and that without communication no process is possible. The concepts of mass society and mass communication are inextricably linked.

In the medley of modern communication three key trends have become apparent:

- Communications technologies are flooding policy-makers with options which they do not understand; amongst which they must choose; and which will have profound effects on society (in the straight-spoken words of a research programme of the Massachusetts Institute of Technology).
- There is no generally accepted theory of communication. This vacuum has obvious practical implications. There is no accepted framework or context within which policymakers (whether the Annan Committee; or the US Justice Department, which is currently investigating ABC, CBS and NBC; or the Indian Government, which is currently assessing the results of its massive experiment in instructional television by satellite) can analyse, measure, understand and decide policies on today's numerous communications issues. In the UK, for example, there is no framework within which the Government, the broadcasters, the Post Office and the Trade Unions can cope with the technical possibilities and social implications of electronic mail. And there are many other such hybrid technologies with far-reaching but still unknown social, industrial and economic effects.
- Several new concepts have recently impinged on the discussion of broadcasting. They are either taken from other fields or are completely new, and they include such concepts as 'the information environment', 'information overload' and the 'information poor'; the idea of information as a *resource* in society; and the role of communication policies as a tool of social development. (Not surprisingly, recent demands for a 'new international economic order' soon spawned a parallel demand for a new international order of information.

The technological possibilities are numberless. Engineers can now transmit TV signals at much higher frequencies than before and the old familiar long and medium waves can carry much more information. Microwaves, optic fibres and waveguides, satellites, co-axial cables and multipoint distribution systems are

the new highways of electronic communication. They are as different from the old radio wave or single telephone line as a new six-lane motorway is from a winding farm track. And like the modern road network, the modern telecommunications network can carry a 40-foot juggernaut lorry as easily as a pedestrian — in fact, more easily, because the one does not endanger the other. A telex message can be transmitted alongside or even in the intervals of a TV picture. Another trend, equally important, is that television (video) equipment is everywhere getting cheaper, more reliable and more multi-purpose. Yet another is the development of hybrid techniques. For instance, the BBC, IBA and the Post Office (and the Japanese and French telecommunication authorities) have developed neat methods of using spare capacity in the TV signal to print out words, rather like sub-titles, on a TV screen. The BBC's Ceefax and IBA's 'oracle' teletext systems are in operation now. The special decoding device costs around £400; with the mass production of microprocessor units, it is likely to cost around £30. Within ten years, every home will have one. The Post Office device, 'Viewdata', is even better value. It will have about 100,000 pages of information, and it will be interactive. You will be able to use a telephone handset to dial a page — in effect, to ask a question — and the Post Office's computer will automatically display the page — the answer — on your television set. The first market trial of Viewdata is scheduled for 1979.

These technical facts of life are important. But they are secondary. The important issue, in the face of such a Pandora's box of wizard gadgetry, is not what, but *how*. Not what it is, but what it *means*. Not the form, but the *content*. For instance, the development of Ceefax, Oracle and Viewdata is well Communications technology is bombarding decision-makers with options which they do not understand and among which they must choose.

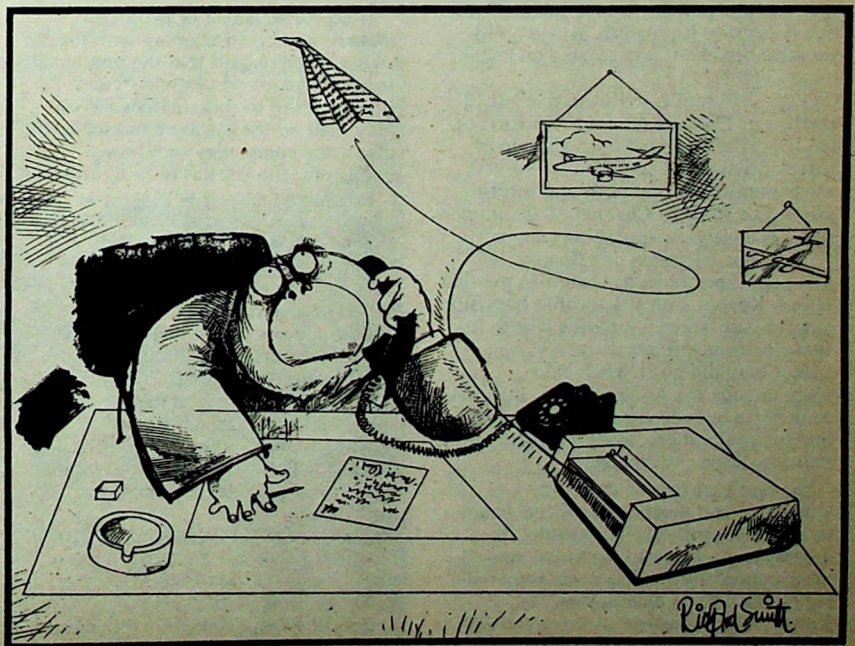
advanced both technically and editorially. Yet a whole series of simple questions have not been asked, let alone answered.

Are the broadcasting authorities and the Post Office the most appropriate agencies to develop these services? (No). Should these bodies continue to develop any such services without a full public discussion? (No). Should small-scale, locally-determined 'alternative' groups be enabled to contribute? (Yes — but they have not been invited). With teletext, it is a clear case of trying to bolt the door (choose *social* options) after the horse has gone (after the engineers have already foreclosed all the *technical* options). Another example is the recent establishment of small-scale radio stations to service small populations. Such stations were technically possible long before the establishment of large, national ones. Yet the small radio stations are now described as 'experimental' as if they were some rather dangerous expedition into uncharted waters. In fact, the label reflects the fear of central government more than the novelty (or any scientific purpose) of the stations themselves.

For all of the new technologies we lack an authentic basis for public policy, an agreed calculus of public need.

To reach that goal, a new approach is necessary. It must take account of communications' central and continuing position as a basic constituent of society and of society's political power. It must be both expert and public.

Two recent British events point the way. The first is the series of articles that appeared in *The Times* in 1975 by Peter Jay (Presenter of LWT's 'Weekend World', Economics Editor of *The Times* and not unimportantly, son-in-law of James Callaghan) and John Birt, Executive Producer of LWT's current affairs programmes. Birt and Jay coined





# VIEW FROM THE BARGE

Canals are trickling back into people's consciousness, as more and more people spend their holidays on narrow boats or even make them their homes. But could canals once again be used for transport, and, if so, under what conditions? Ray Hulm explains...

THIS COUNTRY's two thousand mile network of inland waterways has received a good deal of interest and publicity in recent years. Although most of this interest has been concerned with the restoration of derelict canals and the boom in boating holidays, a small but dedicated body of opinion has repeatedly called for the re-introduction of canal freight carrying. Transferring freight from road to canal has definite environmental and other advantages, but it's not quite as easy as it looks.

One of the appeals of the old narrow canals is their small scale and this is also their biggest disadvantage. Most canals are built to take boats with a maximum beam of seven feet and draught of three feet. The traditional working narrow boats

worked in pairs and could carry about fifty tons between them. This is a very small load for the comparatively slow speed of water transport — the narrow canals being nothing if not slow. You will hear stories of the old boats doing London-Birmingham in three days but this was made possible by a well-maintained cut and long, hard working hours. There seems no getting away from the fact that narrow canal carrying means a small gonnage being moved at slow speed with a lot of hard work. I should point out here that in addition to the narrow canals, there are wide navigations running inland from major ports (the Manchester Ship Canal, for example). These are still very important freight routes and will hopefully remain so.

## Widening

What about widening the narrow canals? The idea has been around for a long time, and in fact the Grand Union was widened to fourteen feet during the thirties — a case of too little, too late. The trouble with canals has always been shortage of water. Every time a boat uses a lock, one lockfull of water is drained from the section of canal above the lock. Eventually the summit level will dry out, especially as it is probably at too high a level to be fed by streams. In order to avoid this, water has to be pumped back up to the summit. There's a thought! Has anyone considered using the rush of water when a lock is emptied to power the pumping of water back uphill? [Let's hear from you!—Eds]

Enthusiasts often point to the wide commercial waterways off the Continent as an example of what can be achieved in water transport. Fair enough, but it seems to me that if you want an extensive canal system, then having a relatively flat country like Holland to start with is a decided advantage. Also, we must not confuse true canals that cut across the contours of the land, with canalised rivers having a permanent head of water.

Of course, up to now I have been using the logic of capitalism to evaluate canal as transport routes. Many people have been arguing for some time that it's absurd for transport systems to compete with each other. They should *complement* each other. We could take this one step further and think about other ways to evaluate

a phrase, "the bias against under-standing", which they suggested summed up television's characteristic of preferring entertainment to elucidation. Never had the broadcasters been so publicly and yet so seriously attacked — and by two 'favourite sons', too. The Birt/Jay thesis was that television's presentation of news and current affairs was too dependent on the traditions of the cinema newsreel and bad provincial journalism. It was a provocative argument and created an instant *cause célèbre*.

Quite different is the second event: the starting of Channel 40 at Milton Keynes. On this local cable network a group of video activists and community workers are transmitting local news and information. The spirit of Channel 40 is summed up in one viewer's appraising comment: "That's not television, it's Channel 40." The organisers' objective is not to provide Milton Keynes with yet another television channel but rather to provide it with its first electronic information service.

Not only did both events take place outside the Annan debate, but they took place outside virtually all the UK's institutionalised processes of broadcasting policy-making and change.

The fact that two of the most interesting and most controversial issues to appear recently did so outside the normal arena is not an argument against having an institutional process for deciding public communications policy. Rather, it is a criticism of the particular set of processes that are now current in

the UK.

For instance, there is an obvious need for an agency to allocate UK cable networks on some other principle than that of 'first-come, first-served'. Yet the Home Office, the current regulatory body, has chosen (or stumbled upon?) principles which have been rightly criticised as being almost worthless.

Rod Allen, editor of *Broadcast* magazine summed them up with typical acuity when he said that the only qualification needed was an honest and sincere desire to make money. When they realised there was no money to be made, the companies withdrew.

Clearly, the UK has to find, urgently, a new way of coping with innovation, a new way of changing its communication channels and contents, both as a means and as an end.

We must replace the inefficient and partial system of ad-hoc committees every ten years with a continual and more-or-less coherent discussion, both governmental and public.

We must provide a firm basis for a national communications policy. (Possible components are a Broadcasting Council, a Parliamentary Standing Committee, and an independent research institution).

We must not inhibit personal initiative (as Birt/Jay) or initiatives from other fields (as the Co-Ax Project). Rather, it must *encourage* initiatives by giving society the space, time and money to carry them out.

And we must take into account events and trends in other countries.

The new processes cannot be found by altering the arrangements at the centre — or, indeed, by any alteration that is formalistic, directive and non-participatory. In the words of Dr Boren, America's arch anti-bureaucrat, "bureaucrats never alter the ship's direction, they merely fiddle with the compass". What we need, however, is a substantial alteration of direction towards a pluralistic situation in which small-scale, self-help and self-determined groups can speak to the centre and to each other with a real sense of equality, with authenticity, and with the knowledge that action, if appropriate, may follow. Some matters must be done on a central and even an intergovernmental basis (for instance, the allocation of radio frequencies). But questions of programme policy (and I don't mean only programme content) should be worked out on a collaborative basis and with reference to the people concerned.

We need more information, not less. We need more sources of information. And they must be independent, free and accountable to different constituencies, instead of the present fake constituency called the nation or the general public.

There must be no pretense about consensus. Consensus may be a conclusion, at certain times and in certain places. It should not be taken as an assumption.

John Howkins



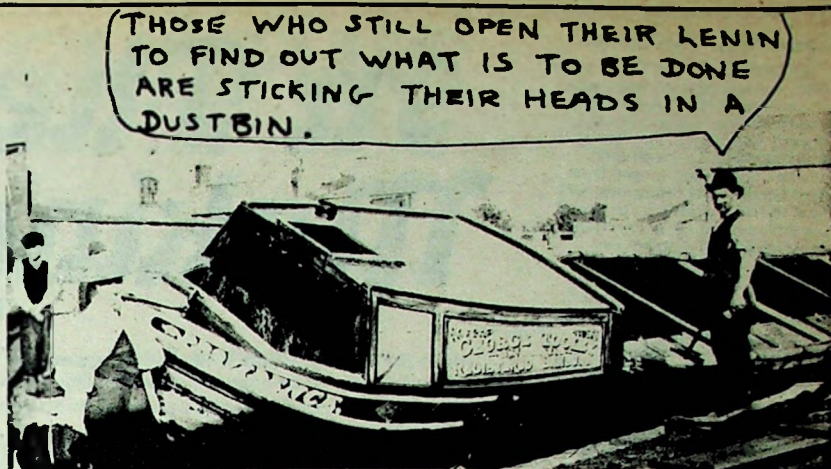
methods of transport — or anything else for that matter. Once speed and returns on capital are no longer the prime considerations it becomes a case of 'all power to the imagination'. We might favour a particular means of transport for environmental reasons or simply because we found it to be more *pleasing*. Which brings me to the major use of the canals today.

### The Leisure Industry

In the wake of the enthusiasts who prevented much of the system from being abandoned, came the leisure industry. Recent years have seen a boom in canal holidays and it has been suggested that the volume of traffic is greater now than at any time in the past. Fortunately, the kind of congestion that has blighted the Norfolk Broads probably won't happen without the water supply running out first. During this year's drought, the Inland Waterways Board were forced to close large parts of the system. We can assume that, given a general shortage in the future, canals will come well down the priority list for water distribution.

More interesting than the economics and logistics of the leisure industry are the reasons why people find this kind of holiday so appealing. The small scale, the hand operated lock and the slow pace of the whole thing are all in stark contrast to the world that people have to live and work in for most of the year. Originally a vital means of distribution during the expansion of the industrial revolution, canals now serve to patch up some of Capital's other products — boredom, stress and alienation. There is also the intangible feeling of *being in control of the situation* that boating seems to share with trucking and train driving.

But this is something I feel pretty unsure about. The whole trip lends itself very easily to male-dominated, ego-tripping, rugged individualism and the reproduction of all the shit we are trying to get away from. On the other hand, much the same can be said for self-



sufficient farming and other life styles/production methods of interest to radical technologists. The human relationships that emerge from a particular method of production or transportation are, to me at least, far more important than the actual techniques and hardware involved.

What I'm trying to say in all this is that canals will provide an alternative means of transport only when we

- overcome the practical problems of water supply,
- cut down the total amount of freight by distributing things because they are needed rather than lugging tons of stuff all over the country because there is a profit in it,
- reach a stage where we begin to destroy the division between work and leisure and start making decisions, about transport and other things, using a completely different logic.

### Floating Population

As well as being freight routes and linear leisure parks, canals are for some people a place to live. There are several small communities of boat dwellers

dotted about the system. Houseboats have their good points — mobility for one. Many people don't move their boats a great deal in practice, but the option is always there. Some kind of engine is an obvious advantage, but it is possible to walk along the towpath pulling your boat behind! Unfortunately, horses are no longer really practical due to the poor state of the tow-path.

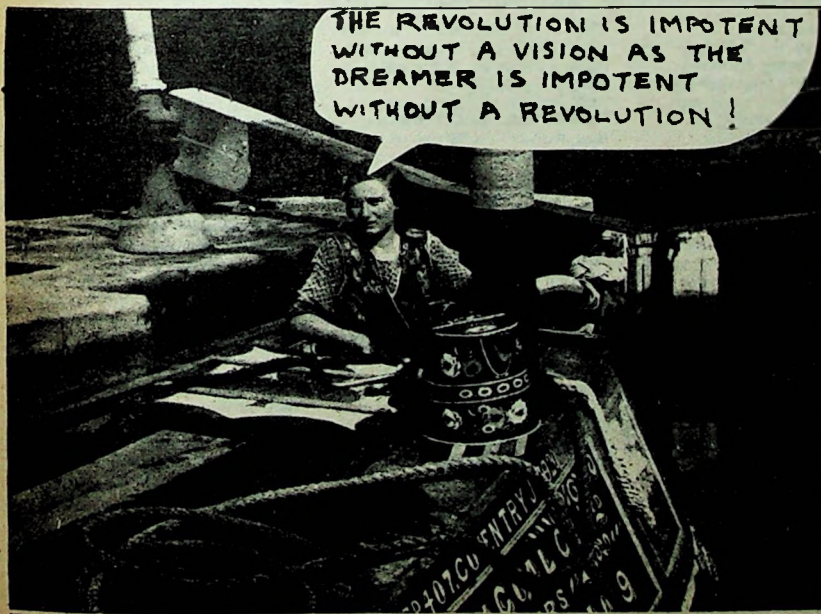
One important point is that boats, and old wooden ones especially, need a lot of maintenance. It's a constant battle to keep the water outside. Nothing is more depressing than a persistent deck leak over your bed (take my word for it). All this work can be a pleasant potter about with paintbrush and screwdriver, or one great big hassle, depending on how you feel about it.

A big drawback is the high price of boats in the first place — though this is not always the case. A friend of mine picked up a twenty foot pontoon hull for £25 a couple of years ago and with a lot of hard work and ingenuity has turned it into a really fine home

### Movin' On

There is no doubt in my mind that this is one of the best ways to use the narrow canals but unfortunately the British Waterways Board don't agree. The legal position is that you can't live on your boat, and stay in one place for more than two weeks, without an official residential mooring. As it is the policy of the BWB to cut down on the number of residential boats, they no longer issue new residential permits. The alternative is to do what most people do: find a nice spot, tie up, and hope for the best. The BWB are empowered to tow your boat away after the permitted two weeks but in practice what happens is that an official comes round to hassle, followed later by a more illustrious official, followed by a 'notice to remove' being stuck on the boat. All this usually takes *at least* six months. By this time people have probably been thinking about moving on anyway and have tended in the past to drift off at this point. But recently, where towpath squatters have got sympathetic publicity from the press and refused to move their boats, the bureaucrats have let the matter drop — for the time being at least.

Ray Hulm





## Laurieston Conference

AROUND 100 PEOPLE, many from co-operative projects, met at Laurieston Hall for a 10-day conference on 'work collectives' in early December. The first part was specifically on 'workers co-ops'. Discussion ranged from legal frameworks for co-ops, and how to make decisions, to use of the government's Job Creation Programme and possible co-operation between co-ops.

There is a full write-up of the first part of the conference. It is available for 50p from Laurieston Hall, Laurieston, nr Castle Douglas, Kirkcudbrightshire, Scotland. Also ITM4 will contain a personal view by one of the many people who went.

## Northern Wholefoods Co-operative

THE NORTHERN WHOLEFOODS CO-OPERATIVE (NWFC) was started in August 1975. It is an association of wholefood shops in the north of England. It has written and researched leaflets on wholefoods which are being distributed to and through member shops. It is encouraging and supporting new shops in the North and is preparing a report on wholefood shops and co-ops for publication in January, as well as generally promoting co-operation between its members.

When it started, contact between member shops had been limited to a few deals on group buying. Now meetings are held every six weeks, member shops holding them in rotation. Topics covered at the last one included discussion of pricing and wages, the supporting of an accountant, a solicitor and a researcher for the benefit of members, the inclusion of non-shop food co-ops in the NWFC and the structure of the NWFC itself – in particular whether it should join ICOM.

Although only nine of the shops involved in the NWFC were formally organised as co-ops when it started, all members are now required to show an intention of organising themselves as co-ops (under ICOM model rules). This is because the NWFC sees the way work is organised in the shops as being as important as the sort of food they sell.

• Northern Wholefoods Co-op  
c/o Suma, 11-13 Wharf Street,  
Leeds 2.

## Alternative Building Society

THIS WOULD: "attract investment from people committed to social change in areas which might include co-operative housing, co-operative work situations, and alternative education. It would be run in such a way as to secure investment and would pay interest as a form of partial compensation for inflation. The society would lead to people needing mortgages on property in order to set up experiments in co-operation, mutual aid etc. They would have to show that their project fitted the defined aims of the society and that they were unlikely to get funds elsewhere. They would also have to show that their repayments were likely to be paid in some way and pay for a building society valuer

# In The Making

This *In the Making* feature is the last before we publish our next full directory of co-operative projects. This directory ITM4 is due to appear (and we're just about on schedule too!) in early February.

Project and other entries have been flowing in, so this page contains just a few snippets of ones that will be in ITM4. We've also got lots of articles – on industrial action for socially useful products, workers' control in China, co-ops using the Job Creation Programme, rural desolation and everything else you wanted to know. There are reviews of books and pamphlets, together with a section on information sources.

We've also increased our subscription rates to take account of rising costs and the increased quality of production of the directory (see below). As before, we'll send you directories and supplements at cost price until your pound runs out. Donation subscriptions last for the same time as ordinary subscriptions – the extra going to help pay overheads and develop ITM.

To keep the *Undercurrents* feature going at full steam, we need entries and ideas all the time, so keep on writing to us at the address below.

## SUBSCRIBE TO ITM!

Subscribers receive the current issue of the ITM directory *plus* supplements (2 or 3 times a year). The latest directory is just out (we hope!). The new subscription rates are:

ORDINARY SUBSCRIPTION £1.00  
DONATION SUBSCRIPTION (if you can afford it) £2.00

INSTITUTION RATE £2.00  
OVERSEAS RATE £2.00 (\$US 4.00)

Copies of the previous issue (ITM3+) are available at 35p.

All mail to:  
ITM  
c/o Acorn  
84 Church Street  
Wolverton,  
Milton Keynes, Bucks

to value their property."

Proposals for such a building society are now being discussed. Approximately £70 is available to cover postage charges, small legal fees etc. involved in getting a scheme underway. Anyone interested should contact:  
• David Goffin, c/o 202 Branch Road, Burnley, Lancs

## Auction

A BIG GEORGIAN HOUSE (listed building) with two cottages, outbuildings and 100 acres in a very beautiful part of central Wales, is being put up for auction soon. The property development company who own it have gone bust and a number of people from the community at Gleneirw Mansion, Cardigan, are trying to get together a group who would be interested in buying it to form a collective/commune, working the land organically.

Gleneirw came together through advertisements. They have an age range of 2½ to about 60 and some really diverse points of view/priorities. It is probable that

a few of the Gleneirw people will want to take part in this venture (they are bursting at the seams!). They can provide some of the cash, but not all by any means. Gleneirw has a model constitution, worked out by one of their members who is a lawyer, and this could be used when setting up the new place.

• Bob Sloane, Gleneirw Mansion, Blaenporth, Cardigan

## Trucking Collective

RESEARCH INTO the feasibility of a 'trucking collective' has started. Following discussion at the Laurieston Hall Conference (also featured on this page) people are investigating the 'estimated demand and pattern of transport requirements of alternative co-operatives, and the cost and likely speed of the operation'. They would love to hear from anyone with a spare 5-ton truck – "or even a narrow boat." If you're interested in using or helping run the trucking collective contact:

• Bob Oppenheimer, 66 Hornsey Rise, London N19 (01-272 0759)

## Alternative Germany

DAS ALTERNATIVE ADRESSBUCH seems to be the German equivalent of ITM, though perhaps concentrating less on 'productive' co-operative projects. The 1976 issue has addresses and brief descriptions (in German) of a couple of hundred projects in West Germany and Berlin, together with a smattering from elsewhere in Europe. It costs DM 6.48 from: • Arbeitskreis Alternatives Adressbuch, Darmstädter Landstrasse 180, D-6000 Frankfurt 70, W. Germany

## Village Co-operative

PEOPLE ARE WANTED to develop a rural village co-operative on the Welsh borders. A group of cottages and some land are available. Anyone interested should be concerned to relate personal growth to a wider political perspective of alternative feminist and socialist ideas. Long-term aims would be to develop local community ties, build more houses, be relatively self-supporting with a mixed workshop agricultural economy. Capital is not essential, willingness to work hard is. Contact:

• Box No MH, *In The Making*

## Unity Records Co-operative

A RECORDS CO-OP has been set up by a group of people with skills and experience in a number of different fields of music, and in recording technology and management. What brings this founding group together is "the conviction that the capitalist record industry does not serve the real needs of the people: it swamps the young with predominantly backward ideas (ranging from sadism to sentimentality), and it singles out certain talents for *star treatment* while the mass of talent amongst the rest of the population has a hard time getting a hearing."

The co-op intend to counteract this by producing records that popularize progressive ideas: first a record about the lessons of the General Strike of 1926 which draws together traditional working class music forms – such as brass bands, industrial ballads, etc – in a contemporary rock-based musical idiom; and second, a record by the rock group *Peoples' Liberation Music* of traditional anti-fascist and anti-racist songs as well as new songs on a number of topical and general issues.

They also intend to produce records on a *Community* label, to serve the needs of the recent proliferation of musical activity at community level: steel bands, brass bands, singing groups, ethnic minority groups, fringe theatre music groups, school bands and choirs. They hope to acquire their own pressing plant and hence produce records in runs of 100 to 500 copies. This means that they will be able to offer these local music groups the technical equipment and know-how required to effectively get their music onto tape and then onto disc. The groups will be able to buy their records at cost price and use them to publicize their activity, and raise funds for their projects.

• Unity Records Co-op, 47 Abdale Road, London W2



# REVIEWS

## Thule Oil

*The Shetland Way of Oil*, edited by John Button. Thuleprint Ltd., Sandwick, Shetland. 134 pages. £2.40.

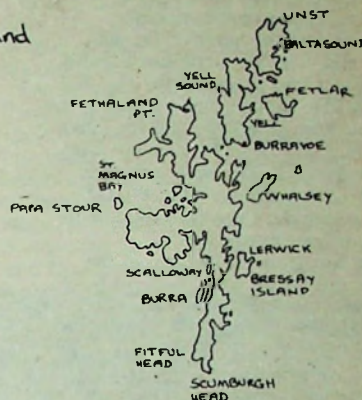
The story of Shetland and oil reads like a third world development saga of which the British would shrug "it couldn't happen here". Backward, poor islanders (with some highly sophisticated neighbours) living by traditional industries (fish, knitting, crofting), suddenly thrown into the very deep end of the twentieth century, with oil offshore and oilmen on.

It's a story which had to be told for a number of reasons, the best of which is as a recapitulation of the errors and successes to date as the Islands brace themselves for the 'permanent' presence of oil as a factor in everyday life, as distinct from the more occasional, albeit disruptive, impacts which oil operations have so far had.

Fortunately, Thuleprint have done the job definitively. The editor of *The Shetland Way of Oil*, John Button, is local Friends of the Earth co-ordinator as well as a Shetland writer and publisher, and the menage he has assembled covers the issues very thoroughly. The best chapter is the one on the three-way complex of relations which arose between the oil companies, the Shetlanders, and the Zetland County Council, and out of which the Shetlanders came out surprisingly well. The story, in Daphne Davies's 'Public

and not-so-public Relations' is simply a must for the student of power and "policy on any scale.

Other highlights are Jim Nicholson's chapter on events so far; the Thuleprint setup is sufficiently lightfooted for this to be remarkably up to date. The ecochapters (fish, visual impact, birds, archaeology and others) are very variable but are mostly a model of evenhandedness, which was probably a relief to the Companies. The fish chapter is of very high quality, which is just as well as fishing is still the main Shetland industry and the one which is subject to the most potentially destructive direct and indirect forces from oil developments. Likewise, the chapter on developments at Milford Haven, whose oilport is perhaps the nearest thing the UK already has to the terminal going up at Sullom Voe, is useful, but the one on Norway, with



which there is really very little in common politically, is not.

But it's all there: 14 chapters on every aspect from the filter-feeding of shellfish to the Shetland 'labour force' by way of the politics and the technology; and all produced so as to be a useful tool for anyone who might have to meet the multinationals head on; or anyone concerned with the wild places of Europe as high technology goes to new and different locations; or just the voyeur who wants to read how a young and ambitious civil servant wiped the floor with the oil companies and was put on the board of Benn's Notional Oil Corporation for his pains. Marvellous. Martin Ince

## Free Heat

*Domestic Heat Pumps*, by John Sumner. Prism Press 117 pages £2.95.

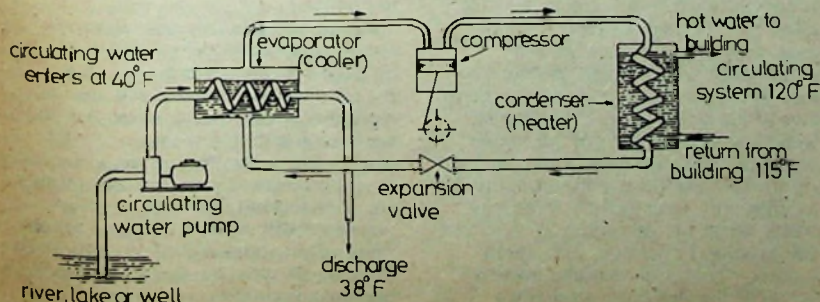
The long-awaited "last word on heat pumps" is available from Prism Press. John Sumner has made their study his life's work: he designed and built a large heat pump system for Norwich Corporation in 1945/6 and has been heating his home with two or three experimental ones since the early fifties; most of his experimental results come from these

machines. However, the promising development of heat pumps was curtailed when the cheap Middle East oil started flowing, even though he recorded then that they were both economic and fuel saving. Some bitterness about not being heeded is evident. He opens with a reprint of a lecture to the Institution of Electrical Engineers on heat pumps and Britain's precarious fuel position given in 1956.

The technical discussion begins with

a simplified explanation of basic principles using some analogies and 'helpful' concepts which I personally find confusing and rather difficult. The ideal Carnot Cycle (as it is called in Thermodynamics) is not complex and I think it should be tackled by a clear exposition. Analogies etc can then be drawn in to elucidate the theory further. It is important to note that this is almost a textbook and as such is fairly technical. However there are no complex mathematics, just a bit of multiplication and division. It is in the *physical* concepts that the subtleties arise.

The best chapter tells how to approach the design of a domestic heat pump. The output of the machine needs to be matched to the requirement of the building and many other difficult decisions have to be made from the choice of low-grade heat source and refrigerant fluid to the method of heat distribution in the house. There is therefore no blueprint here though many of the design calculations are worked through in the appendices (a thermodynamic dustbin). However, if anyone is brave enough to build one, I don't think you can stop here. You will have also to refer to a first-rate





refrigeration textbook (since fridges are the same machines as heat pumps) and a servicing manual. John Sumner gives details of techniques of improving the Performance Energy Ratio (P.E.R.) i.e. efficiency. Suitable standard compressors and heat exchangers can be obtained but then even if your silver soldering is flawless you will still need to have the system filled with a Freon refrigerant professionally.

He reviews the 'state of the art' at the end, which is none too hopeful. You won't find much off the peg, but it is possible to have one made to specification from standard parts for £200 per B.H.P. This won't leave you much change from £1,000. Also a number of imported machines from the U.S. are available but they have too low a P.E.R. to save much fuel.

This brings us to the crux of the matter, are heat pumps likely to be of any use in saving fuel and money? John Sumner of course says yes but is his appraisal critical enough? He reckons on a minimum figure of 3 for the P.E.R. (the ratio of heat given out to the motive work put in), enough for the fuel saving to cover the higher capital costs and more to make it a good saving. He takes the efficiency of electrical power production and distribution as 33% which multiplied by a P.E.R. of 3 gives about 100% overall fuel efficiency. He claims that gas boilers are around 65% efficient and oil 50%. While no doubt this is typical of domestic boilers, surely it could be increased with better design. Also although the newer power stations may be 33% efficient or more, Peter Chapman in *Fuel's Paradise* (Penguin) quotes a year round average efficiency of 25% (delivered) and Robin Clarke mutters 20%. This leaves us level pegging. Another factor not considered is the effect of a million heat pumps on the loading factor of the power stations: will they amplify the diurnal and seasonal fluctuations of demand? How realistic too is a P.E.R. of 3? With a good low-grade heat source like a long buried coil this is fine but would be almost impossible to achieve with sav an air coil. Heat distribution should be at a lowish temperature too and not in high temperature central heating radiators. Study of a standard US air-to-air heat pump (*Alternative Sources of Energy* 22) yielded a P.E.R. of 1.4-2.0. There is nothing gained here over direct fuel burning.

A more hopeful development that he describes is to have a high efficiency petroleum engine to drive the compressor; using all the waste heat from it a P.E.R. of 4 is possible. This is much more interesting.

If you live over a Cheshire salt mine and have no piped gas, so that anything is better than electrical resistance heating, or if you have a Roman villa with underfloor air ducts, you need a heat pump. If you can build one yourself on the cheap like John Sumner, go ahead and experiment! You will find his book most useful.

Pete Glass

## Busy Speculum

This is not a review, but a shameless plug, for the *Women's Health Handbook, A Self Help Guide*, £1 for 115 pages from leftie bookshops or 16 Mehtley Terrace, Leeds LS7 3NL. It was written by Julie Brooker, Ann Geraghty, Rose Star and Nancy MacKeith; MacKeith compiled the book.

In September the Second National Women and Health Conference brought together a movement which has been growing steadily over the last three years. Why are so many women exploring women's health, often in women's health groups? In this country only 10% of doctors are women. Overall, however, there are more women health workers than there are men but most of them are employed further down the ladder in such jobs as nursing, physiotherapy and so on. Women also use the health service more than men. We go to the doctors more, there are more of us in geriatric hospitals, and we take up the majority of psychiatric beds. (Men go to prison instead.)

Women not only perform most of the caring jobs within the health service, we also, as mothers and houseworkers, are expected to give health care for free to the men and children around us. We stay at home when they are ill. We must remind people of this when they talk about 'community based' health care, it means that women will be doing more of it.

Women need health care not only when we are sick but when we are well. To have children safely and to make use of contraceptives (and abortion when we do not want them) are technical services requiring some expertise but perhaps not seven years training and certainly not accompanied by moral judgements.

Doctors, by insisting on a monopoly of the tools of health care and by mystifying their use, have created a situation where they have power over an increasing range of our everyday experiences from birth to death. We are constantly being told not to listen to old wives tales (that is other women's real experience) and instead to take middle-aged male professionals word as gospel. In our health groups we have taken the first steps towards regaining control of our own bodies by self-examination with a plastic speculum to look at the cervix, the neck of the uterus. One of the intentions is to familiarise women with those parts of our bodies with which we have been denied familiarity. Underlying this is a responsibility for keeping our bodies healthy, a responsibility which we can choose to undertake for ourselves rather than abdicate to a doctor. This involves becoming conscious of the well body, so that we become sensitive to changes in our bodies

which might indicate the development of sickness. When this is applied to most parts of the body, this theory goes without saying. We see our faces every



morning in the mirror and touch them many times in the day. So we soon become aware of a swelling developing into a spot, or a change in colour or temperature. And yet when this applied to the genitals many people react negatively, seeing it as sexual perversion. To some people a woman knowing her cervix and her vagina is too powerful a tool for her to cope with. Using a speculum, she might diagnose herself and not go to the doctor and the infection get worse; she might waste the doctor's time by wanting to discuss what she has seen. And anyway, what's the point when she can go to the doctor and he'll look for her and tell her if there's anything she needs to know?

Our answer to these attitudes is that a doctor does not see you often enough to know what is normal for you. He cannot be sensitive to the subtle changes that would enable him to practise preventative medicine by detecting early signs of infections, disease and pregnancy. With a few exceptions the medical profession is often evasive and condescending and doctors do not tell us what we want to know.

We published in July our 'Women's Health Handbook' written and produced by women from health groups all over the country. We have sold out and are reprinting already partly because there has been great interest shown by older women in our chapters on the menopause, hysterectomy and cancer — subjects that are often left out of books aimed at younger fertile women. We need to continue putting out such information and to carry on all our campaigns as long as our bodies and our lives are controlled by others.



# Rumours of War

*NATO Facts and Figures*. 379 pages. Free from NATO Information Service, Brussels-1110, Belgium. *The Soviet War Machine*. 247 pages. Hamlyn. £4.95. *Ecological Consequences of the Second Indo-China War*, SIPRI. 119 pages. Published by MIT Press in the UK and USA. Sw Kr 76.50.

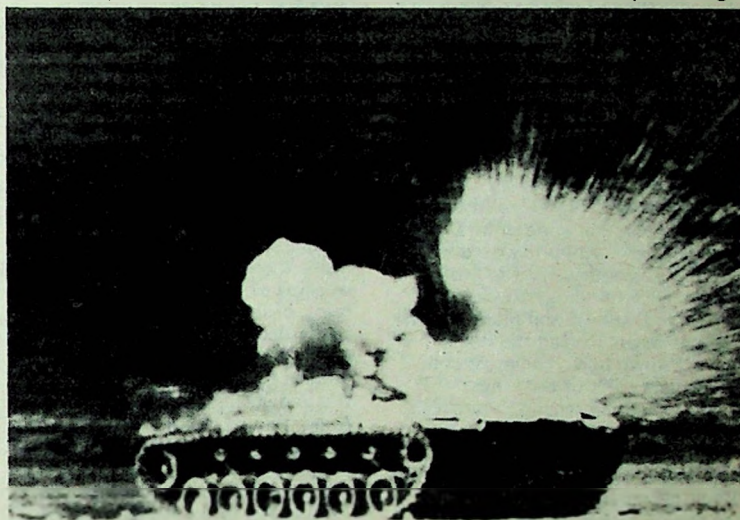
The easy one first. *NATO Facts and Figures* is a fat, hard-bound book full of everything you want to know about NATO and aren't willing to pay to find out. It covers the political and military sides as well as such crannies as the Committee on the Challenges of Modern Society, and also says a bit about the Warsaw Pact side of the fence. Presumably this section will be enlarged in the next edition, in the light of the present exchange visits between British and Soviet officers, planned to facilitate understanding between "men with similar professional tasks". It seems very divisive for books to be published emphasising only one side of this most constructive of symbiotic relationships at a time when co-operation is the theme of East-West relations.

Still, this book is the one for any secret NATO freaks among our readership. The main trouble with it, as might be expected, is that it's bad for your head if you keep it around without a clear idea of what use you want with it, simply as a piece of generalised intelligence. But then the same goes for most of the military press.

It is certainly true of the fat, glossy, absurdly cheap and very opinionated *Soviet War Machine*, given an uncritical review saying how pretty the pictures were in *New Scientist* by their normally sane Soviet correspondent Sarah White. The book was written by a collection of military heavies from such establishments as the Royal United Services Institute, Sandhurst's Soviet Studies Centre, and the Edinburgh University Defence Studies mob. Of course, Sarah was right, the pictures are splendid and, together with the diagrams, tables and the like, give the best generally available view of the equipment available to the Russians.

As well as hardware descriptions, there are chapters of heavyweight analysis of Soviet military history, tactics, strategy and intentions. These are of record-breaking tenuousness. Since 1945, the Soviet army has been involved in no operations except border skirmishes with the Chinese and a few police actions against revolting East Europeans. This compares very badly with the US Army's proud history of involvement in actions against everyone from the Vietnamese — of whom more later — to Cuba, and even the British progress from the Malayan

emergency to Irish troubles via Yemen, Oman and all stations to Reykjavik. Therefore it's nearly impossible to assess what the Red forces actually would do if they took on the task of rolling back capitalism. The tactical diagrams are lacking in any visible content — all they show is that the Reds would encircle the enemy — or not — wipe out as many of them as they could with nuclear — or maybe conventional — weapons, and then walk over



the survivors. This is the output of a very serious (for the Military), expensive (for us) and intensive (in terms of qualified manpower used) programme to divine Soviet tactical intentions. It has involved reading every available piece of Soviet writing on the matter and analysing them all to the limit of their content. As far as can be told, it has yielded nothing except the news that the Russians are not ignorant of elementary tactical principles.

And the strategy is no better founded, it seems. There is no doubt in the authors' minds that the Soviets would like to walk all over Europe, and quotes are adduced as evidence for this. Of course, it's true that such quotes exist, and that despite opinion to the contrary among ex-Presidents of the USA (I'm writing this in October) the USSR did grab all of Eastern Europe at the end of World War Two when everyone else was too knackered to care. On the other hand, the Finns and Austrians still carry on as ever they did, and the USSR was certainly right to take steps to see Germany off after being broken by her in the First World War and having to break her in turn in the Second. The West's fine words about disarmament of Germany had after all come to nothing.

Since then, the main Soviet effort has been in pushing weapons at all manner of little wars from Ireland to Latin America.

Wars do not start because of the availability of weapons, but because of political forces, and it's no use blaming the USSR for these conflicts unless one can be allowed to blame the USA for their much more enthusiastic arms trade.

The authors of *The Soviet War Machine* have no doubt that militarism is the main plank of Soviet political action abroad — although they fail to say that this has been the case since before Marx was a lad, or that military tradition is not a trait unique to the USSR.

The authors' shared belief that most of the things that the Russians do are of sinister intent has many amusing consequences. For instance, one author insists that the second Trans-Siberian Railway (TSR-2, as it will presumably become known) is being built solely because the first one goes dangerously near the Chinese frontier (or "along the

Chinese boarder" as he unfortunately puts it). Not, silly suggestion, to help open up the largest virgin area of natural resources in the Northern Hemisphere. (Just for fun, the same paragraph claims that "the European USSR is an enormous plain which stretches unbroken from the Ural Mountains to the English Channel". Likewise, the Red Army's practices of training their troops, holding political education for them, taking steps to check their loyalty, gathering intelligence, developing weapons, and making itself felt politically are all regarded as evidence of the most awful menace overhanging the West and its dominions. The fact that every army from the IRA to the US Marines does the same is of no interest to the cold warriors.

All in all, *The Soviet War Machine* is a thoroughly nasty book. Pretty pictures (many of them quite dazzling) and systematic diagrams of everything the Reds have (of no possible use to this book's readers, most of whom must be simple voyeurs of military doings), vie with bland, vague, and very singleminded evidence to the effect that the Reds are out to get us. It has the same general status as the Ardrey book reviewed nearby, which sets out and eventually succeeds to the author's satisfaction, in showing that killing people is natural. Read it, if you must, and be horrified; but



don't say you weren't warned, and don't read it at all without being clear politically why you're doing so; otherwise it's just going to be bad for you!

At the risk of sounding like a Sunday School teacher, it is tempting to cite *Ecological Consequences of the Second Indo-China War* as a casebook of where the *Soviet War Machine* mentality can land you. The 'Second Indo-China War' (the first was the one against the French, dummy) was, however, a very unusual event in military history. A war was fought long after everyone from Jack Anderson to the CIA knew it couldn't be won, and was fought largely by the application of more and more technology. Major bombing raids were sent out to bomb the jungle (by computer navigation as cloud cover was usually complete) from six miles up because of unreliable reports that the enemy had been seen in the area some time previously; as the enemy were hiding in the jungle, it was removed by plough and defoliant; concussion bombs were used to make helicopter landing places in jungles where none was before; and so on. And of course, all to no avail; the war was already lost because Imperialism was politically untenable, and only for that reason.

The catalogue of things done in the vain attempt to reverse this state of affairs is long and gruesome. Anyone who doubts man's ability to combine bad intentions and destructive technology to yield an effect that land, animal and plant have no hope against ought to read the full evidence set down here. The most complex and fragile parts of the jungle — chiefly the mangrove swamps — are also, it seems, those least able to stand the effects of large quantities of explosives, toxins and other insults, but it is apparent that it will take an unknown period of time for even the resilient jungle to resume normality in some of the more heavily fought-over areas. "It has been estimated on the basis of logs coming into local sawmills that over four-fifths of the trees in War Zone D were struck by flying metal." And, if you think the folly affected only plant, animal and earth, "There exists a macabre report that tigers . . . were thriving on the widely available dead and wounded soldiers."

This is much the best book — well written, well researched and complete with ten pages of references from every source from the *New York Times* to the *Proceedings of the North Central Weed Control Conference* — on the ecological aspects of Vietnam, being much better than the admirable Communist Party booklet on the same matter. It's difficult to convey its power in a short review, the more so as it is derived from scholarship as much as from political conviction. But read it is you want a sane and knowledgeable look at military things, as the majority of what's written about the military is either dangerously lunatic, like *The Soviet War Machine*, or just not good enough, like most of what the left produces. Incidentally, the book's cost (Sw Kr 76.50) is about £10.50 in real money, so pester the library for it. [more like £11.33 now!-Ed]

Martin Ince

# Radiculture

*Radical Agriculture*. ed. Richard Merrill. Harper & Row. 459 pages. £5.20.

It's a shame that this book has taken such a long time (five years) to produce. Because, if it had appeared earlier, radical assessment of the foul deeds done in the name of agriculture would have gone much further by now than it has. Some of the chapters seem particularly prophetic. The details may have changed, for example DDT is only used for restricted purposes in the US today, but the arguments for an organic 'forward to the land' movement are more pertinent than ever.

If you want to back up your case for an organic farming alternative with a figure, a table, or an example, you will probably find it in this book. Unfortunately the source book nature of some of the twenty collected essays puts one off. This is not so surprising when you notice that the publisher of the hardback edition is New York University Press. Nevertheless it's worth making the effort to read it, because inside there are many insights into the working of the world. For instance, many of the individual authors are aware that it is not just the economic power of large food companies that hinders the development of a co-operative and ecologically sound alternative; so do, though, more subtly, many commonly accepted values and ideas.

Principal amongst these is the concept of efficiency. As Wendell Berry makes clear in the second chapter, *Where Cities and Farms Come Together*: "Nearly all the old standards . . . have

It means cheapness at any price. It means hurrying to nowhere. It means the profligate waste of humanity and of nature. Real efficiency is something entirely different. It is neither cheap (in terms of skill and labour) nor fast. Real efficiency is long term efficiency."

Those who like their solutions political may find the *Organic Force* of Jerome Goldstein a trifle naive. Even organic farming can be capitalised on. However they could not wish for a



more penetrating analysis of how large, vertically-integrated food companies control university agricultural research for their own ends than: *Hard Times, Hard Tomatoes: The Failure of the Land Grant College*. US government grants are used to improve the appearance and mechanical handling of crops at the expense of nutritional value and the health of the consumer. For instance, "There is strong evidence that DES, a growth hormone fed to cattle, causes cancer in man. Yet DES . . . was discovered, developed, patented and promoted at Iowa State University". Which leaves one wondering what research is being done in Britain. What's wrong with white butter anyway?

The concluding section on *Food, Energy and the Rural Renaissance* points out many of the shortcomings of an organic movement that haphazardly advocates pest control methods that seem to have worked in specific cases without any clear understanding of how they work; recommends non pest-specific garlic solutions as a pesticide; and has little idea of the magnitude of the problems it is going to come up against. However, the book does sketch out ways forward, while calling for pressure on the US government to fund research into organic farming. Along with the expected essays on aquacultures and solar collectors is a very interesting one on *Insect Population Management in Agro-Ecosystems*.

All in all an important book. A disappointingly dry read but a must for those already wondering if we shouldn't abandon agribusiness practices for a sustainable alternative.

Dave Smith



now been replaced by a new standard of efficiency . . . which requires a relentless subjection of means to immediate ends. The standard of efficiency displaces and destroys the standards of quality because, by definition, it cannot even consider them.

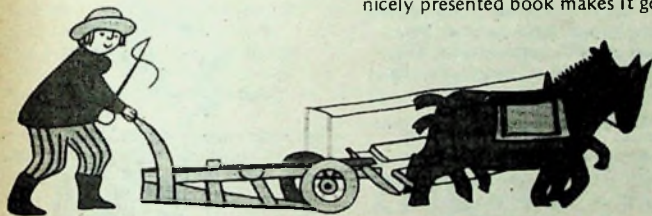


# Wot....No Mud?

*The Complete Book of Self-Sufficiency.* John Seymour. 256 pages. Faber and Faber. £5.50.

The complete book of self-sufficiency – a very bad choice of title. That's one of the few derogatory things I have to say about this book. How can any of us be *completely* self-sufficient? The beginning, too, disappointed me. "Many people", says John Seymour in the Introduction, "move from the cities back to the land precisely because they find city life, surrounded by people, too lonely". But most of the people in the cities cannot afford to simply "move" back to the land. I'd like to have read a lot more in *The Complete Book of Self-Sufficiency* about how self-sufficiency can be made possible for the majority of us who haven't a hope of raising the money for even a few acres at present price. John Seymour seems to be in favour of land reform, judging by his columns in *Resurgence*. But in his book there isn't a single mention of it anywhere.

In general, however, *The Complete Book of Self-Sufficiency* is very good. Two hundred and fifty six big pages packed with facts and information. It is a superb piece of two-colour design work, though perhaps artistic license was used a bit too freely: in none of the pictures is it muddy or dirty and from the enthusiastic way Seymour writes



you wouldn't believe it ever rained in this country! It's also odd that in his chapters on slaughtering animals he doesn't mention any noise.

I've a few nit-picking criticisms of the Gardening section. "Never grow the same annual crop on a piece of land two years running?" Not true: runner beans will grow in the same place quite happily. Asparagus: John Seymour says it is nutritious, but according to Lawrence Hills (in his book *Grow Your Own Fruit and Vegetables*, Faber, £2.75) asparagus is a bit of luxury and does not provide much in the way of vitamins considering the amount of work needed to grow it. And as for tomatoes: if you pull off the leaves "to let the sun get at them" then you encourage greenback disease.

Squeezed in near the end, almost as

an afterthought, the Section on Self-Sufficiency in Energy, only nine pages, was altogether too skimpy for a book which claims to be 'complete'. On the other hand, I was quite refreshed not to

be preached at about the need to be a vegetarian. John Seymour makes killing animals seem almost natural. I might even start eating meat again. But he's no heartless carnivore either. "I stopped shooting wild geese", he confesses, "when I discovered that they mate for life".

Sally Boyle

## Brad Advice

*Technological Self-Sufficiency*

Robin Clarke. Faber. 302 pages £2.95

*Technological Self-Sufficiency* is not a book for the home producer so much as for the do-it-yourself alternative technologist. In it, Robin Clarke shows us "... that in this over-specialised, expensive world it is entirely possible and indeed imperative for us all to learn some basic skills, and so to make do with less and to live better as a result".

In sixteen chapters we learn about the complete range of skills required by the AT enthusiast – from making soap to building techniques, from aquaculture to methane conversions, Robin Clarke was one of the founders of the BRAD commune in Wales and it was in the conversion of their farm and near derelict cottage that he discovered his own abilities – "Concrete mixing, drain laying, carpentry, joinery, roofing, plumbing, wiring, guttering, rendering, farming and even vehicle maintenance soon became part of the daily life. And we did them well."

The authoritative, chatty style of this nicely presented book makes it good and

inspiring reading and if Robin Clarke had just retired from a life of craftsmanship I would probably give it a high recommendation. But he hasn't and I question whether he really has the depth of experience, eighteen months in a rural commune, to write a book like this. For example, in the chapter on food he tells us that "... if you buy organic wholemeal flour, your bread will actually work out a great deal more expensive," and that the only way to bake bread cheaper than bought bread is to grind your own flour. In the chapter on transport he says "Actually, any new bike is now ridiculously expensive, I suppose because demand has fallen to such low levels. Maybe they'll get cheaper again. Meanwhile, go for a second-hand machine, I personally can't abide drop handlebars, and unless you're an enthusiast I doubt that you will. So go for a nice gentlemanly upright handlebar, and check that the frame is sound. If you don't want additional expense, turn the thing upside down, revolve the wheels and watch for irregularities. If the wheels are dished, you'll have to get replacements, so allow for that in the price. The rest of the machine doesn't matter too much."

Statements such as these make me wonder what other ill-considered advice this book contains. I'm afraid Robin Clarke has disappointed me. He has padded out what should be a factual book with opinions he is not qualified to give, and he has evaded telling us very much at all about the BRAD community.

Alastair Nisbet

## City Lib

*Change the Street*, Anthony Fyson.

64 pages. Oxford University Press. 75p.

Sholto Douglas and others reclaim African deserts by planting trees – but what about English deserts? *Change the Street* is Anthony Fyson's solution to the advancing decay in our cities. This clearly written book explains the different ways in which our streets have been eroded, and whole areas have become urban deserts. He has chosen a wide selection of photographs and newspaper cuttings illustrating sad scenes and tales of the developers' invasion, with occasional glimpses of what it could be like if only we act before it is too late.

Fyson's advice of forming street groups joined to neighbourhood councils has already begun in many areas but they do seem a long way removed from Cliff Harper's Visions of people harmoniously digging the urban soil together. If you don't feel that you can join a local amenity group, don't despair; your individual energy can affect your surroundings and can be just as vital to the macrosphere as group energy. Fyson does not mention this – a serious omission!

*Change the Street* shows the vast extent of the continuous attack by developers and councils alike on our building stock. However, as a result we now have the opportunity to bring the hydroponic farm to this country, by transforming our city deserts, and to postpone the move to a smallholding retreat for another few years.

Fiona Cantell



# Convey It Yourself

## The Conveyancing Fraud

Michael Joseph, 27 Occupation Lane, London SE18. 239 pages. £1.80, post free.

Michael Joseph is an outsider. After 18 years as a solicitor, he likens the legal profession to an elephant with a voracious and harmful appetite for divorces, motor accidents and conveyances. He accuses layers and the law of contributing little more than delay, inefficiency and expense — all heavily disguised by incomprehensible mumbo-jumbo.

The main target of this book, however, is conveyancing — the legal work involved in transferring ownership of a house. The indictment is threefold. First, most conveyancing is done by unsupervised, unqualified clerks — the legal skills required being negligible. Secondly, the steps actually taken amount to no more than a ritual dance in which important matters are left quite to chance. Solicitors neither inspect the property nor visit the local Council offices — the two most fruitful sources of information for an intending purchaser. Finally, the purpose of this ritual dance is to conceal the solicitor's



rate of remuneration, which is estimated at a cool £80 per hour.

Fault is found not just with lawyers but also with the law and the book outlines a proposal for reform of the Land Registry. More immediately interesting is the author's advice to boycott the solicitor and either to use a cut-price conveyancing outfit or (preferably) to do it yourself. There follows 100 pages of reasonably detailed instructions on how to do it yourself. Conveyancing, he maintains, need be no more complicated than obtaining a passport. That may be poetic licence but there is certainly enough here to help all but the most visionary to do their own sale and purchase. All you really need is a clear enough head to fill in forms and sufficient organisation to follow the instructions. And time — my experience is that doing your own conveyancing always takes much more time than the seasoned conveyancer may credit.

Why should all this interest readers of *Undercurrents*? For one thing, we are all property-owning democrats now

with over one-half of all households being owner-occupied. A spot survey of this magazine's editorial collective would no doubt demonstrate this. So this is a book that may save you money at the same time as it displaces sham professionalism. It should be good enough on its own, but if in difficulty reference may be made to its nearest rival, Edward Moeran's *Practical Conveyancing*, or to your local legal advice centre.

Michael Joseph is naturally preoccupied with the activities of lawyers but there are others who coin their living out of the property transfer market perhaps even more redundantly — the estate agents, mortgage brokers, sur-

vveyors, insurance companies, building societies, and banks. One suspects that a purchaser more often complains of a defect in the house which the surveyor had not identified, or of being compelled to take up an insurance policy as a condition of being offered a mortgage, than of a defect in title. There is scope here for a more comprehensive DIY manual for house transfers covering all aspects.

The style and the approach of this book call to mind Nader rather than Proudhon. Even so, readers may find plenty here to bolster their assumption that property is still theft. What they may miss is any questioning of the forms of individual ownership. There is work to be done in devising new ground rules for holding property communally but anyone interested in these problems will not find succour here.

Peter MacMahon

# Let Them Get Stoned

## The Unfinished Animal

Theodore Roszak. 264 pages. Faber and Faber. £2.95

This book is "a survey and critique of the current religious revival in Western society . . . with an exploration of its meaning as a stage in our evolutionary growth". A large claim, much too large for a set of breathless and badly written essays, cobbled together unedited as far as one can tell into a book lacking shape or structure. Not so much a Baedeker as a collection of traveller's tales from the 'Aquarian Frontier', Roszak's label for the many and various manifestations of the American 'consciousness circuit': Jesus Freaks, TM, Gurdjieff, Silva Mind Control, Psychic Surgery, Orgonomy, Don Juan, Bio-rhythms, ESP, Uri Geller, Neural Cybernetics, SF, good old fashioned honest dope, etc, etc (his list runs to 140 headings). He considers that these fads should be regarded as signs of a genuine spiritual quest which will transform human consciousness, and that this quest is the emergent theme of our times; survival and social resolution are not enough. Maybe not, but they'll do for starters. If your brother asks you for bread, it is an insult to tell him to get stoned.

Every now and then Roszak remembers this and pithily puts down the pretensions of the Aquarian frontier. I particularly liked his *Reflections on an Aphorism by Pathanjali* (Pathanjali taught [Ch.II, Aph. 29] that there are eight steps to Yoga and that the first is neither the familiar breathing exercises nor the athletic postures that Western students start with but *Yama*, defined as moral duty, "absolute rejection of violence, theft, covetousness, lying, incontinence"; the second step is *Niyama*: purity, cheerfulness, simplicity, study and reverence.) Roszak writes:

"Surely too many Western practitioners of yoga are playing trivial games with

the psychic and physiological spin-off of the divine science. They learn to clear their sinuses, to mitigate their migraine, to flirt with the joys of the kundalini. Perhaps, besides achieving an enviable muscle tone, they even happen upon occasional intimations of samadhi. But all these achievements become barbarous trifles if we forget that yoga, like all spiritual culture, is a life discipline and a moral wisdom. While Pathanjali does not scold and bully us at length like the preacher in the pulpit, nevertheless the severe simplicity of his one aphorism



makes his meaning clear to all but the wilfully ignorant. On the way to samadhi, there are eight steps, and the first of these is moral conduct.

And again I wonder: if we take the instruction at its full value, who among us in a lifetime of striving, will ever mount and surpass that first step."

In sum, this is one man's honest account of the confusion of his travels in the 'realms of gold' that seasoned Aquarians may find useful but which will only confuse and irritate the neophyte, who should stick to Colin Wilson. At least Wilson has learnt how to write.

Chris Hutton Squire



# Red Roses

*The Political Economy of Science; The Radicalisation of Science*; edited by Hilary Rose and Steven Rose. Macmillan. 218 & 205 pages. Each £10 hb & £3.95 pb.

The radical science movement has, say the editors in the (common) introduction to these books, for too long relied on "a cheerful and energetic eclecticism". There is, they argue, an urgent need "to move beyond the early pragmatic phase" and for the development of theory to guide the various campaigns and struggles engaged in by activists.

The Roses argue that it is vital to produce an analysis of the ideological role of science to complement the more familiar analysis of the role of science and technology in the material world. In Marxist terms, they suggest we need to consider science's 'superstructural' functions as well as its application as part of the infrastructure or 'base' of society. Science, they point out "spans both base and superstructure; it has both a productive and an ideological role", and, rather than infrastructure determining the content of the ideological superstructure, as some mechanistic versions of Marxism suggest, the two interact.

Marxists have tended to focus their analysis mainly on infrastructural relations — because these are more concrete than superstructural relations. As the Roses say "ideology is of its nature mystifying. Where the sharpness of the contradictions within the capitalist mode of production continually force themselves into the consciousness of the worker, the very role of ideology is to obscure these contradictions and diminish the level of consciousness". Which makes it all the more vital to face the difficult task of providing analysis of superstructural relations.

Nowhere is the difference between the two realms of analysis made more visible than in the chapter on the contradictions of science and technology in the production sector by Mike Cooley, which, being grounded in the material relations on the shop floor, conveys a sense of sharp reality inevitably missing in most of the other contributions.

Nevertheless, there is plenty of meat here, assuming you have the perseverance to struggle through some fairly turgid writing. The Roses' 1972 account of the recent history of BSSRS *et al* (with a postscript bringing it up to 1976) reports some ideological developments (and gossip) which may be of interest to those who have not followed the internal discussions within BSSRS. The bulk of the rest of the essays deal with issues related to the life sciences. For example, if you missed it when it came round your way last time, the celebrated (or notorious) 'Lysenko Affair' gets a replay. However there are also articles on physics and ecology — the latter being Enzensberger's excellent 'Critique of Political Ecology' first published (in English) in New Left Review a while back. Andre Gorz presents

a swashbuckling critique of elitist science — which earned him a half dozen or so sour letters in the columns of the New Scientist, which recently printed an edited version of this chapter. And of course there is Joseph Needham's excellent essay on Chinese science, part of which we reproduced in *Undercurrents* 18.

All in all it is a valuable collection, representing the state of political consciousness prevalent in the radical science movement today. You may not agree with it all — and you may ask for more action and less words. But I think we would all subscribe to what the Roses state is the

'common desire' of the movement — that is "to work towards a new society where a new science and technology can serve the interests of all the people". What disagreements might emerge would probably be about the practical means of attaining these goals, and the extent to which theorising can contribute to what in the end must be a matter of grassroots organisation and struggle. Obviously action must be guided by theory, but theory must also be tested and grow out of practice. The two must be in dialectical interaction. Whether these books will aid this process remains to be seen.

Dave Elliott

## Natch

*Naturebirth*, Danae Brook. 292 pages. Penguin. 90p.

In her introduction Danae Brook recounts her own three very different experiences of childbirth from which she became convinced of the basic rights of women to produce their children happily and free from fear. She examines the present male dominated medical scene, including recent research by Dr. Leboyer and others, and evaluates the arguments for and against hospital deliveries.

The second part of the book concentrates on self-help during pregnancy and delivery. Personal care, diet, relaxation and breathing, including a detailed description of the method taught by the National Childbirth Trust, choice of doctors, hazards of pregnancy, drugs and breastfeeding are all discussed. This leads on to a description of the progress of normal labour and how the application of relaxation and breathing techniques learned during pregnancy can be invaluable to mother, baby and attendant staff.

I hope that this book will stimulate women to look for a positive experience in labour and childbirth. I have reservations about the author's style and hope that this will not scare off the mass of ordinary women who could so well benefit from what she has to say.

Liz Harries



## Diggers' Doings

*The Way Out*. Margaret Smith and David Crossley. Lansdowne Press. 242pp, \$A 6.95: Distributed in Europe by Iris Verlag, Fuchstanzstrasse 6, 6393 Wehrhein 2, West Germany.

Australia has wide open spaces and a hot climate, but most of its fertile land is concentrated on the Eastern and Southern seaboard. As you go away from the Great Dividing Range and the coast, it becomes drier, ending in scrub and desert. Most people live in the industrial cities where the alternative society was born and nurtured by dope and the Anti-Vietnam movement. Later, in disgust at cities, fumes, dope and other hippies, some moved to the country to grow organic vegetables on ten-acre plots. Others stayed in the city and founded social-action groups, free schools, health centres and so on.

The stories, critiques and visions of various people, as of 1974 when this

book was compiled, are gathered here. The book contains articles on Philosophy, Scenes, Self-Evolution, Education, Spirituality, Health, Politics, Communications and Institutions, Living Styles, Living Structures and Resources. Politics and large Radical Movements are given light treatment, the accent being on small self-running groups and self-development. Much space is given to the Nimbin festival, a week-long coming-together of alternative living that became a landmark or jumping-off point in many people's lives.

One word of warning: the group I was involved with, Link-Up, a community help and information centre, crashed through internal self-contradiction, which makes the article we wrote rather embarrassing reading. Perhaps other ideas were also too idealistic? A follow up on how varied ideas and communities have progressed, and the mistakes made, would be interesting.

Chris Moss



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## WORK

**ALTERNATIVE TECHNOLOGY** group was recently formed at the Open University to develop a wide ranging approach to this subject. Anybody interested in carrying out research in this area and who has a 'good' degree (or expects soon to have) is invited to get in touch with

Peter Read at the Technology Faculty of the Open University, Walton Hall, Milton Keynes MK7 6AA. Possible areas of interest include alternative production systems and design (tricycles, windmills etc), self-sufficiency and land use studies, and the analysis of the impact of A.T. on manpower and other resources, including the economic welfare aspect.

**CO-WORKER(S)** are wanted to join our small firm which makes scientific instruments for use mainly in agricultural research. The existing group of three partners and three part-time workers (progressing towards a workers control and co-ownership structure) is only just coping with an embarrasment of orders, mostly from overseas, so we're planning gradually to increase our work-force and enlarge our tiny workshop by renovating the adjacent barn. Our activities include metalwork, electronics, designing instruments, drafting leadfils, accounts etc. and skills in any of these (and architecture and building) would help. Currently, with self-financed expansion, there is little spare cash though we manage each to draw £1/hr (net). Most of us live in the adjoining Commune, Parsonage Farm, and are thereby able to reduce some of the usual conflicts between living and working.

If you're interested, phone or write about yourself to Delta-T Devices, 128 Low Road, Burwell, Cambs. Tel: Newmarket 741584.

**YOUNG MAN** seeks employment on organic farm: no previous experience, but enthusiastic; wages unimportant, just bed & board required. Box CR.

## PUBLICATIONS

**ALTERNATIVE TECHNOLOGY** publications, Poetry, Songbooks, Cosmic Comix, Natural Food Guides, etc. Send s.a.e. for lists. Mr G. Clarke, 19 Martin Close, Whitwick, Leics. LE6 4DY.

**ANGLO-NUBIAN GOATS** — The Anglo-Nubian Breed Society Magazine costs 25p inclusive of postage — from Joan Jewitt, Romeley Farm, Stanfree, Chesterfield, S44 6AL, Derbyshire.

**PRODUCING FOOD** can use enormous amounts of energy. But it can also be highly efficient. The whole spectrum of food-production methods, from hunter-gathering and subsistence farming to 'synthetic' protein production and the enormous range of energy requirements of these methods, are presented in **ENERGY AND FOOD PRODUCTION**, a new

book by Gerald Leach of the International Institute for Environment and Development. The book, which includes 85 worked energy budgets and 11 detailed appendices, demonstrates the tremendous scope for covering energy in food production. Order your copy now (£5.50 including postage and packing) from John Stares, IPC Science and Technology Press Limited, IPC House, 32 High Street, Guildford, Surrey GU1 3EW.

## SHELTER

**WANTED HOUSE TO RENT. LONG LEASE.** Two couples and three children require house and land to cultivate. Preferably Cornwall area. Anything considered. Willing to repair or renovate. Please write to Paul & Denise, Penrose Farm, Tregurrian, Nr Newquay, Cornwall.

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**FOR SALE** Detached modernised part-centrally heated 2/3 bedroom country cottage on ¼ acre land set in Lincolnshire farmland, yet only 5 miles from nearest town. Fluorescent lights throughout driven by completely restored Lucas Freelite windmill. Good fishing 10 yards from front gate. Ideally suited for full conversion to eco-house. Fertile gardens will support family. £5,500 cash to night applicant. Box ATM.

**LARGE** octagonal listed building to rent. Bags of space and ¼ acre — needs slight attention! Planning permission for AT conversion granted. R.W.T., The Water Tower, Finedon, Wellingborough, Northants

## COMMUNITY

**GIRL**, 31, interested in joining, or establishing a new commune. Some capital. I want to spend a period from the end of March making working visits to established communes. Want to learn about self-sufficiency, animals, gardening. Living communally in London. Very practical, can offer wide crafts experience, have run craft and drama workshops all ages. Box LC.

## ETCETERA

**VEGETARIAN** female (21) requires travelling companion — Continent-Easter onwards, 6-9 months — hitching or van — hostelling, camping. Contact Liz Vears, 'Rivendell' Ripe, Lewes, Sussex.

**NOBODY IS TOO POOR TO PAY CLAP TAX!** Even if you're on the dole, help transform society: Send 16½p in stamps for the latest CLAP handbook. **DOES YOUR PROJECT NEED MONEY?** If it's radical and imaginative and community-based, apply to: CLAP, the Community Levy for Alternative Projects, c/o BIT Free Information Service, 146 Great Western Road, London, W11 (tel 01-229 8219).

**BADGES** Bicycles save resources & the environment. Advertise their virtues with our lapel badges. These are 1½" in diameter, bearing the slogans 'Cycling Saves It' on a blue background, 10p each & postage 8p for up to 10. 8p each for orders over 20 to enable your group or shop to make a few bob. York Friends of the Earth, 40 East Mount Rd, York YO2 2BD.

**PLANNING** implications of Low Impact Technology. April 15-17. An opportunity to confront the planners and discuss how planning might adapt in future to the ideas and projects of Alternative Technology. Further details from Peter Townsend, Principal, Peak National Park Study Centre, Loshill Hall, Castleton, Derbyshire S30 2WB. Please enclose s.a.e. & quote ref. UDC.

**LONELY** ecologically inclined male in early 30s seeks affectionate & sympathetic female companion to share cottage in Wales. Interests self-sufficiency, music, environment, walking, simple things, animals. Hopefully a relationship for life. Box 100.

**GOING PLACES?** With wheels and spare space? Then ring Lift Exchange Centre and we'll find you petrol-sharing passengers. **WANT A LIFT?** £1 registration entitles you to request unlimited lifts/destinations for six months. **COMPUTERS** — save fortunes daily by sharing cars into town. Full details 01-834 9225.

**CARP FOND** is planned as part of our ongoing project to diversify a 60 acre dairy farm, adopting an organic approach. Can anyone offer advice or information? Alan Pursch, Hallbanks Farm, Crosshouse, Kilmarnock.

**YORK COMMUNITY BOOKSHOP** has been trading for eight months. We are a co-operative trying to serve the community and not profit, and we are attempting to buy a shop on Walmgate, York. We have raised enough money in loans to buy the shop, but we still need about £2,500 to transform the building into workable premises. If you are interested and can loan us money (interest-free preferably or up to 8½% interest) please contact us c/o 9 Forest Way, Heworth, York.

**VISIONS: ALTERNATIVE/COMMUNITY BOOKSHOP** 155 Archway Rd, Highgate, London N6. 01-348 1192. Wide range of books, pamphlets, posters on alternative technology, food reform, sexual politics, mysticism, natural medicine, non-sexist children's literature, fiction etc. Open WED-SAT—12-6pm. Member of the Federation of Alternative Bookshops. Part of the ARCHWAY ROAD LIFE WIDENING SCHEME, a non-profitmaking collective with craft workshops, a photographic darkroom, vegetarian cafe, Hornsey Women's Centre, meeting rooms etc.

**THANKS** to Mr Brown and Mr Jenkinson, for intelligence received. **OOPS! OOPS!** Could Box SG (10 letters) and Box TX (4 letters) please send us their addresses please as we've lost them. Sorry & all that.

For various reasons it is still difficult to obtain *Undercurrents* from newsagents and bookshops, although thanks to the brave efforts of our two distributors the number of friendly retailers who carry the mag is steadily increasing. The only way to make absolutely certain of your copy of *Undercurrents*, however, is to take out an annual subscription, which will bring each new edition to your door fresh off the presses every two months.

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Alvin Toffler

# RADICAL TECHNOLOGY

*Radical Technology*: Food and shelter, tools and materials, energy and communications, autonomy and community. Edited by Godfrey Boyle and Peter Harper and the editors of *Undercurrents*, (Wildwood House, London, £3.25/ Pantheon Books, New York, \$5.95), 304pp, A4 illustrated, index. Available direct from *Undercurrents Books*, 11 Shadwell, Uley, Dursley, Gloucestershire, GL11 5BW, England, for £3.50 including postage by surface mail. Order your copy now!

*Radical Technology* is a large-format, extensively illustrated collection of original articles concerning the reorganisation of technology along more humane, rational and ecologically sound lines. The many facets of such a reorganisation are

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The articles in the book range from detailed 'recipes' through general accounts of alternative technical methods, to critiques of current practices, and general proposals for reorganisations. Each author has been encouraged to follow her or his own personal approach, sometimes descriptive, sometimes analytic, sometimes technical, sometimes political. The contributors are all authorities in their fields.

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IT & the Third World/Chinese Science/IT & Second Class Capital/Supermarket Cartoon/Leyhunting: the Linear Dream/How to Make a Ley Detector

### UNDERCURRENTS 4 : The fabled mag in a bag

A limited number of these collector's items are available on a first come, first served basis at the rip-off price of 50p each. Apart from the naked lady on the cover, *Undercurrents 4* contained articles on: the Street Farm; Concorde; Alternative Scotland; DIY Chemical Manufacture; the Chile Community; and 'Hidden' Switzerland. There's also an interview with Murray Bookchin and thoughts on Velikovsky Note that *Undercurrents 4* is not part of our half price back number special offer.





IN THE BEGINING OF TIME  
THE GREAT CREATOR, REASON,  
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ANOTHER! \*